Published every Saturday by the Simmons-Boardman Publishing Company, 34 North Crystal Street, East Stroudsburg, Pa., with executive offices at 30 Church Street, New York

All communications should be addressed to the New York Office, 30 Church Street

Subscriptions, including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free; United States, Mexico and Canada, $6.00. Foreign countries, not including daily editions $8.00.

Subscriptions for the fourth issue each month only (published in two sections, the second of which is the Motor Transport Section) payable in advance and postage free; United States, Mexico and Canada, $1.00; foreign countries, $2.00. Single copies, 25 cents each.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name Registered U. S. Patent Office.

Vol. 88 March 8, 1930 No. 10

In this Issue

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

Buying Timbers for Strength and Durability

WEST COAST 10 Douglas Fir LBR. ASSN.
STRUCTURAL

This Mark is the Assurance of Quality Timber.

Grader Measuring Ring Growth

WEST COAST TIMBER TALKS No. 3

EACH species of wood used for structural purposes has certain definite values for both strength and durability, but timbers within a species vary a great deal in strength factors and in the ability to live under long service. A selection within the species must be made to obtain the highest, medium or lowest values for either strength or durability. At the manufacturing plant, where trained graders are thoroughly familiar with the peculiarities of a species, is the logical place to make such selection.

Strength in Timbers

Strength in wood is dependent on (a) cell wall growth and arrangement, (b) proportion of summerwood, and (c) rate of growth. Oak, for example, is tougher than Douglas fir but Douglas fir is stronger and stiffer as a beam or a post than oak. This difference is because the fibers in oak are not as straight as those in Douglas fir; oak is harder, as the cell walls are thicker, but the straighter fibers make Douglas fir the stronger and stiffer.

To secure Douglas fir timbers of assured strength, specifying engineers may use this table:

FOR BEAMS, GIRDERS AND STRINGERS

Douglas fir, Coast type	*Extreme fiber in bending**
1. First Grade: *Super-Structural* (As described in Paragraph 217, W. C. Lumbermen's Assn., "Number Nine" Grading Rules.)	1800
2. Second Grade: *Structural* (As described in Paragraph 218, same rules.)	1600
3. Third Grade: *Common Structural* (As described in Paragraph 220, same rules.)	1400

* *In pounds per square inch, continuously dry. When timbers are occasionally or continuously wet, proportionately lower stresses should be used.*

Douglas fir common lumber has a value not exceeding 1200 pounds per square inch in extreme fiber in bending, continuously dry. The highest grade, in beams, girders and stringers, is fifty per cent stronger than timbers of the same size in the common grades.

On the basis of hundreds of thousands of tests made by the United States Forest Products Laboratory, at Madison, Wisconsin, definite standards of timber grading have been established by which a competent timber grader can select timbers for special strength or extra durability. To get these properties in the Douglas fir timber you require, it is only necessary to *select the grade desired*, and specify "West Coast Lumbermen's Association *Grade Marking*" or "West Coast Lumbermen's Association *Inspection Certificate*."

Durability, or the ability to give a good service record, is largely a matter of close grain in a timber. In the above grades, the first two — Super-Structural and Structural — carry exact "close grain" requirements. When durability, without the extra strength, is the requirement, a "Close-Grained" Common timber may be ordered in Douglas fir.

Grade Marked Timbers Now Available

Member mills of the West Coast Lumbermen's Association are now prepared, on request, to furnish Douglas fir timbers in the *Structural* and *Common* grades plainly marked so the grade of each timber is shown on the piece. The marks used are owned by the West Coast Lumbermen's Association and only mills maintaining a high degree of accuracy in grading are licensed to use these marks.

A copy of the latest grading rules, "Number Nine," published July 1, 1929, containing the specifications for all grades, from Super-Structural to Common, may be had without charge by addressing the Association's Seattle office.

WEST COAST LUMBERMEN'S ASSOCIATION
AMERICA'S PERMANENT LUMBER SUPPLY

365 Stuart Building Seattle, Washington

C 2-30

Railway Age

Vol. 88, No. 10 March 8, 1930

Table of Contents Appears on Page 5 of Advertising Section

A Railroad Association Nears Its 75th Birthday

THE American Association of Passenger Traffic Officers will next week attain the three-quarters century mark of its service. An article elsewhere in this issue tells of the beginnings of this association and some of the high points in its history.

The various railroad associations have contributed importantly to the development of transportation, yet their accomplishment has been of a nature to escape general recognition. When the early railways were built, it must be remembered, the large corporation as it exists today was almost unknown. The early railroad men, therefore, not only had to work out the technical problems of a new form of transportation, but they also had to grope their way without the guidance of any precedent in perfecting a new form of business enterprise. Their mistakes naturally were many, but over these obstacles they mounted on to ultimate success and prepared the way for corporate development in other industry.

The accomplishment of the various railroad associations in bringing mutually profitable understanding among the railroads on the North American continent can be only barely mentioned here. A little contemplation will show, however, that they provide what is virtually self-government within the industry and that they are one of the most powerful agencies for education in railroad work.

The American Association of Passenger Traffic Officers was founded in 1855 to develop methods and agreements to facilitate the interchange of passenger business and, incidentally, to curtail the revenue losses due to unwise independent action and to fraud. These functions the association carried out with conspicuous success and today it continues its activity in the field of inter-railroad relations in respect to passenger traffic problems. These problems change from year to year. Chaotic accounting conditions, cut-throat competition among railroads and the prevalence of fraud are no longer the chief concern of the passenger officer.

On the other hand, it cannot be said that the problems of the passenger traffic officer today are any simpler than they were when the association's history began. Competition among railroads does not have the undesirable features it then had, but the new competition between the railroads on the one hand and other methods of transport on the other presents problems graver and more pressing perhaps than any which these officers of an earlier day had to solve. There is, therefore, just as much of a need for an association to aid in the solution of passenger traffic problems today as there was when the association was founded. It may, therefore, look forward to a period of service of indefinite duration.

The Toll of Taxes

WHILE most of the new railway records established in 1929 justify "pointing with pride," there is one 1929 mark, shown by Interstate Commerce Commission figures just issued, which the roads would gladly have avoided. This is the new peak set by railway tax payments, which last year exceeded $400,000,000 for the first time in history.

In 1894, railway taxes averaged $100,000 a day. By 1925 they had increased ten-fold, to more than a million dollars a day and in 1929 they amounted to $1,103,097 a day.

Considering annual rather than daily average tax payments of the steam lines, the 50-million dollar figure was passed in 1902, the 100-million in 1911, the 200-million in 1917, and the 300-million mark in 1922. The year 1929 marked another increase of approximately one hundred million dollars in railway taxes and forced upon the roads the doubtful honor of exceeding a total of four hundred million dollars in tax payments.

When railway taxes averaged $100,000 a day in 1894, they consumed $3.41 out of every $100 of gross revenue received by the roads. In 1929 taxes took $6.34 out of every $100 of revenues. To meet these 1929 taxes required the entire gross earnings of all the railways in the country for a period of more than three weeks. Stated differently, after paying their wage and fuel bills and other direct operating expenses, 1929

taxes consumed the total remaining earnings of the steam lines for a period of 82 days out of the year.

On still another basis, the railways paid for taxes in 1929 more than the entire gross revenues received by the individual roads from the transportation of over 200,000,000 tons of freight or from the transportation of almost 360,000,000 passengers. In terms of commodities, they paid for taxes more than the entire freight revenues derived from the transportation of wheat, corn, passenger automobiles, and auto trucks and parts.

Suggestions as to Adequate Signaling

THE subject of train control is not a dead issue with the Interstate Commerce Commission, although the report issued by that body in November, 1928, stated in substance that the carriers would be relieved from further installations of automatic train control by order at that time.

The release of this report terminated a long period of suspense on the part of the roads as to what would be required from them in the way of further train control installations, and permitted them to proceed voluntarily with numerous installations of automatic signaling, interlocking, remote power switches and centralized-dispatcher control. As a result, the total volume of signaling equipment placed in service during 1929 exceeded that for any previous year. This widespread activity in providing signaling facilities must be gratifying to all those interested in safety and increased efficiency of operation, including the members of the Interstate Commerce Commission; in any event the commission has not issued any further general orders requiring the roads to install train control.

The carriers should not assume, however, that the subject of improvement in safety has been forgotten. For example, in reports issued by the Bureau of Safety, I. C. C., covering a train accident on the Pennsylvania, it was suggested that the railroad give immediate consideration to the extension of its cab signaling system or the installation of automatic train control. The Pennsylvania proceeded at once to provide cab signaling on the division mentioned.

In the report of the Bureau of Safety on a rear-end collision on double track on the Grand Trunk Western, the conclusions included the statement that "The automatic block-signal system now in use between Chicago and Battle Creek, Mich., is being extended to Lansing. The protection afforded by such a system probably would have prevented this accident. The need for adequate protection against such a situation is obvious, and it is believed that when considered in connection with the average daily train movement, which is about 36 trains, there is justification for a recommendation that steps be taken toward providing block signal protection east of Lansing."

Likewise in a report from the same body concerning an accident on the Delaware, Lackawanna & Western, the conclusions included the following statement: "This accident was caused by the failure of the engineman properly to observe and obey automatic block signals and other restrictive indications. This accident again directs attention to the necessity for automatic train control devices to enforce obedience to restrictive signal indications when not observed or heeded by enginemen. For a period of several weeks prior to this accident the traffic over this line averaged about 48 trains daily, with approximately the same number in each direction."

The equipment suggested is, no doubt, the next logical step in improving the safety of train operation in each case mentioned. Continued activity on the part of the railroads as a whole in providing signaling facilities adapted to specific needs is the best guaranty against further general orders on this subject from the Commission.

Short Cuts in Stores Work

NO one who has not served in a large stores department of a railroad can fully appreciate what a large amount of clerical work there is to do and particularly what a large amount of correspondence attends a day's work. This results largely from the fact that railway stores are not neighborhood groceries, but mail order houses with many records to keep and lists of customers of different types, all widely scattered. Correspondence is the means, frequently the only means, of communication. The trouble is, however, that it flourishes too well on the slightest provocation and can easily become a serious drain on time, money and and patience, unless someone is constantly watching to keep it within bounds. Standardizing, cataloging and other systematizing of the stores work have done much to reduce correspondence. Some stores have discovered a good remedy in the prompt filling of orders while the encouragement of more direct action between correspondents always gets results.

In this connection, the advantages of a code system of communication also invite attention, at least where telegrams are involved. An example of this practice is furnished by the Canadian Pacific stores which have adopted a series of words and symbols, each of which can be substituted for some commonly-used phrase of several words. In addition, a symbol is used which designates the station from which the message is sent, the symbols being numbered consecutively so that a wire with the symbol NB-16 carries a reference to the store from which it is sent and also the particular file of correspondence to which it applies. Thus, in Canadian Pacific practice, a wire reading, "Tango. One driving tire

retaining ring for engine 2657. Tray 18. B-16", would mean at the receiving office, "Please make immediate baggage shipment of one driving tire retaining ring for engine 2657. Requisition 18 to follow. Berlin 16." Similarly, the reply of the receiving store, "B-16. Throb AN-11", would read, "Your wire 12th regarding driving tire retaining ring. Shipping baggage today."

The symbols designating the store and the file number are used on all wires, irrespective of whether a code is used or not, and this practice is in itself a convenient time and labor saver, but with a code in which a single word represents from 10 to 11 words, the saving in the use of the telegraph wires is outstanding. In view of the amount of telegraphing in stores work, it seems strange that practices of this kind are not more prevalent. It would seem wise not only to expand the use of code systems in telegraph work but to extend it more largely to correspondence itself for the many benefits which can result in meeting the problem of controlling correspondence.

Helping Shippers Reduce Costs of Transportation

THE movement of freight from the railroad station at the point of origin to the railroad station at destination is not the whole process of transportation. The process, viewed as a whole, starts at the actual point of production and does not end until the point of consumption is reached. The railroad part of the transportation process is essential and important. For some commodities, such as, for instance, coal shipped directly from the mine to the private siding of an industry, it may be the transportation task in its entirety. With a large range of products, however, the railroad part of the transportation process, in spite of its importance is, from a dollars and cents standpoint, considerably less of a problem to the producer and consumer than the cost of plant handling, boxing and crating and trucking to and from the railroad stations. Shippers who are inclined to favor lower freight rates might in many instances effect the same, or greater, economies in their total transportation costs by an improvement in their plant handling and trucking methods.

The railroads have a direct interest in the matter. A more general realization of the situation would tend to relieve pressure for rate reductions. A material decrease in the costs of transportation prior to and after the railroad performs its part would lower total production costs and help stimulate traffic. An eastern manufacturer, for example, now produces a commodity which he can afford to sell because of competitive conditions only as far west as the Alleghenies—and his transportation costs are only about 25 per cent chargeable to the railroads, 75 per cent being in plant handling, boxing for shipment and trucking. If these costs could be reduced this manufacturer would be in a better position to secure business and the railroad would receive more traffic from him. Co-ordination of rail and highway transportation, further experiment to adapt the unit container to the needs of railways and shippers, and research to find other methods for reducing non-railroad transportation costs are, thus, activities in which railway officers can well afford to co-operate with their patrons. Interest in such study would focus attention on non-railroad transportation costs in such cases where these are the more important, and should tend both to conserve railway revenues and stimulate traffic.

The Ever-Present Hot Box

HOT boxes, like "death and taxes," are always with us. There never was a greater incentive for reducing their number, for a hot box delay, at the present time, ties up a greater investment on the average than ever before, owing to the increased proportion of heavy, modern equipment in service. There is also a greater loss of earning power per hour of delay, owing to the larger average loads. Repair costs are increased, because of increased wages and generally larger amounts of more expensive materials required. Traffice delays are serious, especially in competitive traffic service.

A significant fact about the hot box problem seems to be that it will not stay "whipped." One aggresive road in the Middle West, for example, which has been working hard and more or less steadily on a hot box reduction campaign since 1925, is rightfully proud of the fact that during two months in the latter part of 1929, performances of over 200,000 miles per hot box were established in freight service. The records show, however, that in February of last year, after at least three full years of intensive hot box prevention educational work, a performance of less than 50,000 miles per hot box was obtained. In other words, without unremitting care in the selection of journal box materials and lubricant, in the proper application of these materials and in frequent checks to make sure that maintenance and inspection forces are carrying out instructions, a good performance as regards hot boxes in one month is likely to be followed with a highly expensive and unsatisfactory performance during the next.

In spite of the simplicity of the A. R. A. journal bearing design, which has long been standard on American railroads, the records indicate that there is still too little knowledge regarding those journal box lubricating materials and their use which will produce the best results, particularly in winter months and under severe weather conditions.

Seventy-Fifth Birthday of
Passenger Officers' Association

Organization founded March 13-14, 1855, to effect friendly business relations among railroads has solved many perplexing problems

THE oldest of the railway associations, the American Association of Passenger Traffic Officers, will have its seventy-fifth birthday on March 13-14—and the association will celebrate the anniversary at its next convention to be held in October.

The commercial aspects of the railways' relations with their passengers in 1855 were chaotic, when compared with modern standards to which we have so long been accustomed. Railways were begun as strictly local enterprises, with no serious problems arising from their relations with each other. As they were rapidly extended, however, lines of individual companies met, intersected, interchanged traffic and competed with each other. Problems of ethical business conduct peculiar to railways, which previous business experience had not met and solved, arose to perplex the commercial officers of these railways.

The purposes actuating the founders of the association are well expressed in the presidential address made to the association in 1884 by L. Tuttle, then general passenger and ticket agent of the Eastern Railroad (now Boston & Maine), in which he said:

No Coupon Tickets in 1855

"The purpose of calling the first meeting of the association was to perfect the means of ticketing, and of doing passenger business in general between the railroads.

"It hardly seems credible under present conditions, that no longer than thirty years ago no coupon tickets were sold. If passengers were ticketed through beyond the line upon which they started, they were furnished single local tickets and their baggage was checked to the first destination and then rechecked to the next and so on, and the purpose of this association was to improve these matters. I think we may be pardoned for a little egotism in saying that the great results (or rather the present almost perfect system of doing passenger business) have come from the action of the association and from its origin thirty years ago. Probably it has done more to make the general passenger agents, as a fraternity, a power in this line than any other one thing. The association has a noble record, but I trust none of the members will feel that the duty of the association is done. It is now in its middle life and ought not yet to turn to the sere and yellow leaf. I hope therefore that every member will take such an interest in this association as will renew its usefulness from now on."

The history of the association has been unbroken since its inception. It is true that its functions have changed somewhat as old problems were solved and

President, Past Presidents and Secretary of the A. A. P. T. O. at Winnipeg, September, 1929

Front Row, Left to Right: President H. H. Melanson (C. N. R.); J. D. Rahner (F. E. C.). Middle Row: A. B. Smith (N. P., retired); L. W. Landman (N. Y. C); W. B. Calloway (B. & O.); W. J. Craig (A. C. L.). Standing: C. B. Ryan (S. A. L.); C. M. Burt (Trunk Line Assn.); R. H. Wallace (Erie, retired); G. T. Bell (C. N. R., retired); C. A. Cairns (C. & N. W.); J. N. Cornatzar (S. L. S. F.); W. C. Hope (C. N. J., retired).

new ones arose, and that a gradual evolution in the problems of the passenger traffic officer is to be noted from the time when securing interline agreements was his major concern to the present when the emphasis is on the promotion and retention of passenger traffic. Nowhere is this change better shown than in the name of the association. Founded as the General Ticket Agents' Association, name changes have occurred as follows:

Five Name Changes

In 1856, to National General Ticket Agents' Association

In 1872, to General Ticket and Passenger Agents' Association

In 1879, to National Association of General Passenger and Ticket Agents

In 1889, to American Association of General Passenger and Ticket Agents

Since 1914, American Association of Passenger Traffic Officers

The founders of the association—twenty in all—"representing the various railroad lines between Boston, New York and Philadelphia, and Cincinnati and Chicago, and the Ohio and Mississippi rivers" met at the Monongahela House in Pittsburgh, Pa., on March 13, 1855, "for the purpose of agreeing upon a uniform system of adjusting all matters connected with 'through ticketing'." Those in attendance at the meeting, with the names of the railways they represented, were as follows:

H. C. Marshall, Cleveland, Columbus & Cincinnati R. R. (now C. C. C. & St. L.); Lewis L. Houpt, Pennsylvania R. R.; L. W. Lewis, Mad River & Lake Erie (now C. C. C. & St. L.); Wm. A. Burnett, Rutland & Burlington R. R. (now Rutland); H. D. Doane, Eastern and Northern Lines, (now B. & M.); James A. Raynor, Michigan Southern & Northern Indiana (now N. Y. C.); E. M. Goodrich, Chicago & Rock Island R. R. (now C. R. I & P.); John W. Brown, Central Ohio R. R. (now B. & O.); R. Walkup, Piqua & Indiana (now Penna.); Thos. Sherlock, U. S. Mail Line; R. Robinson, Champlain & St. Lawrence R. R. (now Canadian National); George R. Weed, Western Vermont (now Rutland); John U. Parsons, Cleveland & Toledo (now N. Y. C.); John Fleming, Ohio & Pennsylvania (now Penna.); William R. Barr, Buffalo & Erie (now N. Y. C.); Charles E. Noble, Michigan Central; Julius Movius, Western Railway, Canada (now Canadian National); P. W. Strader, Little Miami & Columbus & Xenia R. R. (now Penna.); George L. Dunlap, New York & Erie (now Erie); L. Devenney, Steubenville & Indiana (now Pennsylvania Railroad).

Mr. Strader served as chairman of the first meeting and Messrs. Barr and Weed as its secretaries. The convention adjourned on March 14, purposing to meet in July at Hamilton, Canada. There is no record of the Hamilton meeting, however. The next meeting for which minutes have been preserved was held in Baltimore, Md., on February 21, 1856, where W. A. Burnett, of the Rutland & Burlington Railroad (now Rutland) was elected president, and Joseph Huddell, of the Philadelphia, Wilmington & Baltimore (now Pennsylvania), secretary. A constitution was adopted at this session, among the provisions of which were the following:

Accounting Problems

That the "object of this association shall be the discussion of all matters related to the ticket department and an interchange of views in reference to accounts and their mode of settlement."

That "no one shall be considered a member of this association unless he bear a certificate from the president or superintendent of his respective road or steamboat line, endorsing him as their general ticket agent or entitled to act in that capacity."

That "any ticket seller or traveling agent in the employ of any company entitled to be represented may attend the sessions of this association, but shall not be eligible to vote or take active part in its deliberations."

Dishonest Conductors an Early Cause of Concern

Following the Baltimore meeting, another meeting was called at Boston on April 16, 1856. The meeting was postponed for a day "in consequence of the non-arrival of trains from the West, thus preventing the attendance of members." Officers elected were: President, B. F. Fifield of the Terre Haute & St. Louis (now Cleveland, Cincinnati, Chicago & St. Louis); vice-president, R. Steward of the Cheshire Railroad (now Boston & Maine); recording secretary, L. R. Houpt of the Pennsylvania; corresponding secretary, W. R. Barr of the Buffalo & Erie (now Erie). At this meeting the first formal committee report was presented to the association. Its subject, a very live one then and for many years thereafter, was "The Practicability of Providing a Check on the Cash Collections of Conductors." The practice of charging five or ten cents extra when fares were paid on trains was discussed, but with the comment that it could have effect only at stations where ticket sellers were provided and, "again, there are hundreds of people traveling who are not induced to procure their tickets before entering the cars by the prospect of paying ten cents more than others. They prefer to run the risk of being skipped, even if needs be at the expense of an additional dime."

The method of providing a barrier at train platforms and requiring all passengers to show their tickets at the gate was discussed with the comment that, of course, such barriers could not be provided at all stations. Then, too, "many come up to the door before they know they must show their tickets and are squeezed through before they can lay their hands on them; whilst those of the softer sex are generally permitted to pass uninterrupted, especially if they be blessed with a bright eye or rosy mouth—no uncommon occurrence nowadays."

Other proposals were discussed, with the conclusion that none of them were completely satisfactory and that the best procedure was to exercise greater care in inquiring into the honesty of applicants for conductors' positions and then to pay such employees a salary to "put them, if possible, above temptation."

Unfair Advertising Methods

The events of the first year of the new association were celebrated in a well-written narrative poem, paraphrasing Longfellow's Hiawatha, composed by L. L. Houpt in 1856, the length of which prohibits its reproduction here. At the convention held in St. Louis on November 19-20 of the same year unfair competitive practices—advertising in which "personalities are indulged in" to the injury of competitors—were condemned. Proper forms of coupon tickets, to prevent fraud and to provide for just divisions of interline revenues, were also discussed—nor was this problem settled at this convention or at many which followed. The matter of competition among railroads by rate cutting also brought discussion at almost every one of the sessions of the association for the first two decades of its existence. Baggage allowances and check-

The Status of the Railroad in 1855 as Reflected in Advertisements Which Appeared in the American Railroad Journal of That Year

ing was another matter which for years occupied the attention of the association.

The Civil War, apparently, interfered little with the association's activities. Conventions were held regularly throughout the period, with discussion centering, generally speaking, around the same subjects which engaged the attention of the members before the outbreak of hostilities. The war did bring new problems, however, in the arrangements for the ticketing and transportation of soldiers. The eagerness of the association to play its part in healing the wounds of the War is on record in the form of a resolution passed immediately following the close of hostilities—"Resolved, that we are pleased to meet again a number of the Southern members of the Association. We extend to them the hand of fellowship, and at our next meeting we hope to see present a representative from the ticket department of each and every railway in our common country."

The Establishment of the Official Guide

The question of the provision of an accurate and dependable railroad guide was one of the early problems which arose within the association, a committee reporting on the matter at the convention in New York in 1862. It was not an easy matter to arrive at a final settlement of this question, however, and the plan did not come to fruition until 1868 in the adoption of the "Travelers' Official Railway Guide" as the official medium for such information. Rates charged for the transportation of immigrants and the difficulties of arranging for their ticketing at the Castle Garden immigrant station (now the Aquarium) in New York was a fertile source of much discussion at the early conventions of the association.

At the convention held in Philadelphia in September, 1871, a resolution was passed disapproving the practice of railways' making arrangements with outside parties to conduct excursions on a speculative basis, the railroad charging the organizer a rate below standard and the organizer recouping this expense and making his profit by the higher rate charged to patrons. Outside agencies selling railway tickets on commission began to attract attention in the 'Seventies and at the Louisville convention in March, 1872, a committee was appointed to study the proposal to make all such commissions uniform.

In New York in September of the same year a resolution was adopted to the effect that paying an outside ticket seller a stipulated sum per month, ostensibly for "posting advertisements," in addition to his commissions, was equivalent to raising the commission rate and should be so regarded. At the same convention the committee on commissions reported its inability to secure an agreement among the interested lines on a uniform rate of commission for outside ticket agencies. The attention paid to this problem and the interest aroused by its discussion were rewarded, however, when in 1874 the association, again meeting in New York in September, was able to pass a resolution congratulating the trunk lines on the abolition of outside ticket agencies and the discontinuance of commission payments.

Could Not Foresee Such Rapid Progress After 1875

The association was twenty years old when, at a convention in Cincinnati in 1875, Samuel Powell, general ticket agent of the Chicago, Burlington & Quincy, delivered an address outlining the great progress of railroad transportation up to that time. "It seems hardly possible," he said, "that as much will be accomplished in the next thirty years, in the way of progress, as has been in the last thirty; but I think no one would care to hazard the opinion that those who live to see that time will not also see very great changes, even from the present."

In 1876 at its February meeting in Louisville the association gave great attention to arrangements for the transportation of the large numbers of persons who it was foreseen would attend the Centennial Exhibition in Philadelphia. The coming of government regulation was foreshadowed by T. L. Kimball, general passenger and ticket agent of the Union Pacific, in an address delivered to the association in St. Louis in March, 1877, in which he warned the delegates that a certain body of opinion in the country held it "to be the right and duty of state governments to limit the profits of railway capital; to control and fix passenger rates by an inflexible rule of so much per mile, according to class, and to establish freight tariffs and classifications upon the same basis."

Especially important activities of the Association have been the curtailment of ticket scalping and the virtual elimination of counterfeit tickets by the adoption and surveillance of the safety ticket paper.

The fiftieth anniversary of the founding of the organization was celebrated at a convention in Pittsburgh—the cradle of the association—on March 13, 1905. At that time the roll call of the founders was read, but none responded. Of the number, however, five were still living at the time and telegrams of greeting were dispatched to them.

Promoting Intercorporate and International Amity

The detail of interline agreements necessary among the hundreds of transportation companies on the North American continent to provide for a safe, convenient and uniform system of passenger transportation is almost infinite. The association and its later contemporaries, the territorial passenger associations, working through the railroad companies directly and in cooperation with organizations of railroad officers of other departments, have solved these problems, which of course have been mentioned herein in only the most fragmentary form, so successfully on the whole that their infinite variety and complexity no longer come to the knowledge of the public. The history of this oldest railroad association, which history is not dissimilar to that of other associations in the various railroad departments, forms an important chapter in the story of voluntary co-operation between corporations—a form of business organization which was in its infancy at the time the American Association of Passenger Traffic Officers was organized. It is also a chapter in the record of a form of international co-operation peculiar to the North American continent—since the Canadian railways have always taken their full part in the activities of the various American railway organizations, and the Mexican lines have also participated. The term "American" in the name of a railroad association almost without exception must be taken in its continental sense. Indeed the current president of the A. A. P. T. O., H. H. Melanson, is a Canadian—and not the first who has presided over the affairs of the passenger traffic association. The other officers of the association are: Vice-president, C. H. Mathews, Jr., general traffic manager-passenger of the Pennsylvania, and secretary, W. C. Hope, passenger traffic manager (retired) of the Central of New Jersey.

Burlington Equips New Trains

Lorado Taft and Passenger Traffic Manager A. Cottsworth, Jr., Standing by "The Black Hawk"

Revolving bucket-type chair-car seats a feature—One train provided with Hyatt roller bearings

IN the latter part of December and on the threshold of its eightieth year, the Chicago, Burlington & Quincy installed a fleet of three new and completely modern passenger trains. The first of these, the Blackhawk, operates in two units eastbound and westbound between Chicago, St. Paul, Minn., and Minneapolis. The second train is the Ak-Sar-Ben, successor to the Nebraska Limited, and operates in two units between Chicago, Omaha, Neb., and Lincoln. The third train, called the Aristocrat, is the successor to the Colorado Limited, operating between Chicago, Omaha, Neb., and Denver, Colo. The cars on the Aristocrat, leaving Chicago on a given day, make their next departure from that city on the fourth succeeding day; hence, equipment for four complete Aristocrats is constantly in service between Chicago and Denver.

The total amount of equipment required to protect this new service includes 45 new Pullman cars, furnished by the Pullman Car & Manufacturing Corp., and 35 diners, chair cars, solarium-lounge cars, modern coaches, combination smoker-baggage cars, etc., produced at the shops at Aurora, Ill. Roller bearings are provided on one of the trains, namely, the Ak-Sar-Ben. These bearings, furnished by the Hyatt Roller Bearing Company, Newark, N. J., are mounted in journal boxes which conform in outside dimensions to American Railway Association standards and consequently fit in standard A.R.A. passenger truck pedestal ways.

Salon-Bedroom Car Operated Mid-Train Next to the Diner

Twenty of the new Pullman cars are all-section cars and 14 are designed to provide drawing room and drawing room-compartment accommodations. Four salon-bedroom cars afford convenient en suite arrangements of sleeping room and compartment, or sleeping room and drawing room, as desired, by means of intercommunicating doors. These cars are usually operated near the middle of the train with the club end next to the diner to provide overflow accommodations for passengers not immediately able to find seats in the diner. The salon end of the salon-bedroom car is finished in walnut trim with beamed ceiling and windows surmounted by arched molding designed to give an air of smart simplicity. A writing desk is provided in this car; there are also foursome seats for card playing and the comfortable arm chairs and divans which usually feature a lounging room. The dining cars are elaborately but tastefully ornamented, a new feature being an ingenious arrangement for radio reception. The new dining car on the Blackhawk also possesses a feature of interest in the aluminum chairs, designed with box-spring seats and upholstered in blue friezette mohair plush. These chairs were furnished by the Aluminum Company of America.

Like the salon-bedroom cars, the rear lounge cars, or solarium-lounge cars, are attractively decorated and furnished in keeping with the other cars in the trains. In addition to the glass-enclosed solariums which replaces the usual observation platforms, the solarium-lounge cars on the Blackhawk and the Ak-Sar-Ben have buffets in the forward ends and contain two lounge

Mid-Train Salon Car with Bedroom and Drawing Room Arranged En Suite

rooms. The forward lounge room is equipped with a cabinet radio receiving set, while the rear lounge room is fitted with foursome seats for card playing, a writing table provided with engraved stationery and desk fountain pen set, library, terminal telephone, movable chairs and writing divans. The solarium-lounge car on the Aristocrat, on the other hand, has the buffet located near the center of the car, with a separate card room adjacent to it, and the radio instrument located in the general lounge room. A parlor-lounge in the opposite end of the car, equipped with revolving seats, is available for short-haul passengers who do not require sleeping accommodations.

The new Pullman cars, carefully matched as regards interior decoration and equipment, are finished in dove-gray lacquer ornamented in gold, blue, maroon and black. A deep pile carpet covers the floor. Individual side lights of the reading-lamp type are used in the semi-compartment sections, which have graceful flaring seat

Chair Car Equipped with New Heywood-Wakefield Revolving, Reclining Back, Bucket-Type Seats, Arranged for a Party of Six

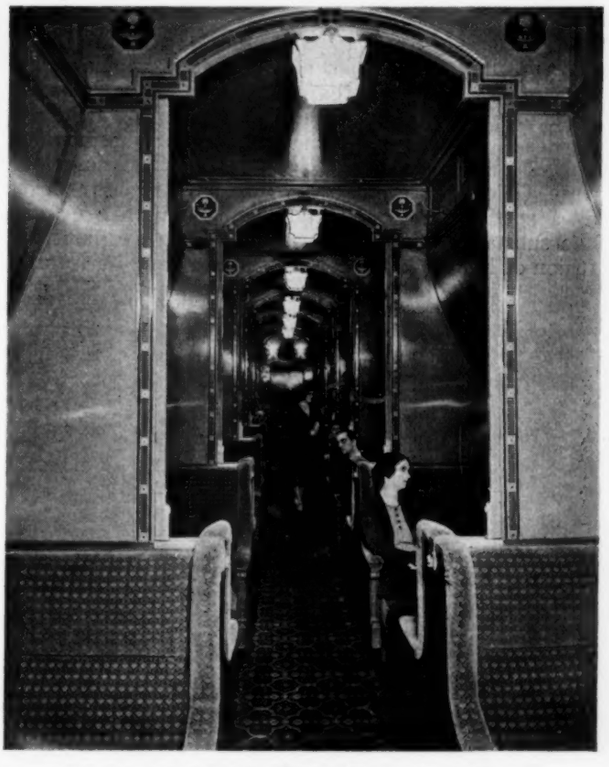
ends upholstered to provide comfortable head rests. A new feature incorporated in the seats is their arrangement to be lifted slightly and drawn forward about two inches, this movement at the same time bringing the riser forward and giving the seat a semi-reclining position. Mattresses used in the new Pullman are of the coiled-spring type. The solid brass window sash fitted with plate-glass panes, cushioned in rubber to assure freedom from window squeak and rattle, have ingenious, easily opened ventilators. The spacious dressing rooms, with overhead candelabra lighting and large mirrors, are provided with white porcelain lavatories and chromium fittings.

Special Provision for Comfort of Non-Pullman Passengers

No pains have been spared to make the coach equipment used in the new Burlington trains fully in keeping, both as to attractiveness and comfort, with other cars used in the train. The day coaches are made especially inviting by attractive ornamentation and are equipped

Club and Observation End of Solarium-Lounge Car

with automatic temperature control, electric fans and other refinements usually associated only with Pullman cars. A feature of the four 64-passenger chair cars used on the Aristocrat trains is the provision of new Heywood-Wakefield revolving, bucket-type, reclining-back seats, which are available without additional charge to non-Pullman passengers. With a center spacing of 43 in., these seats can be revolved independently under the control of a foot lever to any of the five following positions: All passengers facing forward; four pas-



View Illustrating the Many Attractive Features of the New Pullman Cars

Writing Desk in Salon-Bedroom Cars on the Black Hawk and Ak-Sar-Ben

sengers facing together; four passengers half facing each other and the windows; six passengers forming a semi-private group, and all passengers facing the windows, as may be desirable when passing through scenic country.

An interesting feature of the latest Burlington trains is the new type of double tail signs, one being a standard Burlington trade mark with white letters on a black field, bordered in red, and the other, in the case of the Blackhawk, for example, being a photographic reproduction of Lorado Taft's Blackhawk statue, plus the train name, lettered in white, with a black field and broad red border, so that the two signs are harmonious. These signs, made by the Crystal Manufacturing Company, Chicago, are etched on transparent glass, backed by a special plate glass and arranged with a gelatin-like substance between, so as to give an excellent diffusion of light, notable for its brilliancy and uniformity.

* * *

The Northern Pacific's "North Coast Limited" Leaving Seattle, Wash.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended February 22, which included the Washington's birthday holiday, amounted to 828,890 cars, a decrease of 76,613 cars as compared with the corresponding week of last year and of 40,527 cars as compared with 1928. Reductions were reported as to all classes of commodities as compared with last year and in all classes except coke and ore as compared with 1928. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, February 22, 1930

Districts	1930	1929	1928
Eastern	188,204	211,158	195,328
Allegheny	171,024	181,542	170,434
Pocahontas	53,106	58,459	51,843
Southern	134,704	141,498	143,104
Northwestern	95,165	103,206	111,048
Central Western	118,457	136,754	130,669
Southwestern	68,230	72,886	66,991
Total Western Districts	281,852	312,846	308,708
Total All Roads	828,890	905,503	869,417
Commodities			
Grain and Grain Products	41,923	43,933	46,079
Live Stock	23,206	23,765	30,253
Coal	161,122	201,183	173,462
Coke	11,536	13,857	11,370
Forest Products	56,159	60,176	65,115
Ore	8,911	9,362	7,572
Merchandise L.C.L.	219,374	226,776	225,890
Miscellaneous	306,659	326,451	309,676
February 22, 1930	828,890	905,503	869,417
February 15, 1930	891,597	957,498	888,586
February 8, 1930	886,581	955,981	906,477
February 1, 1930	898,894	947,154	926,262
January 25, 1930	862,621	926,474	902,664
Cumulative total, 8 weeks	6,855,386	7,337,591	7,039,637

The freight car surplus for the period ended February 15 averaged 395,039 cars, including 205,936 box cars 136,436 coal cars, 25,456 stock cars and 13,113 refrigerator cars. This was an increase as compared with the preceding week of 21,214 cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended February 22 totaled 57,313 cars, an increase over the previous week of 183 cars and a decrease of 8,231 cars from the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
February 22, 1930	57,313	38,433
February 15, 1930	57,130	38,763
February 8, 1930	57,250	38,932
February 23, 1929	65,544	46,253
Cumulative totals for Canada		
February 22, 1930	440,848	291,015
February 23, 1929	476,853	326,143
February 25, 1928	499,902	302,178

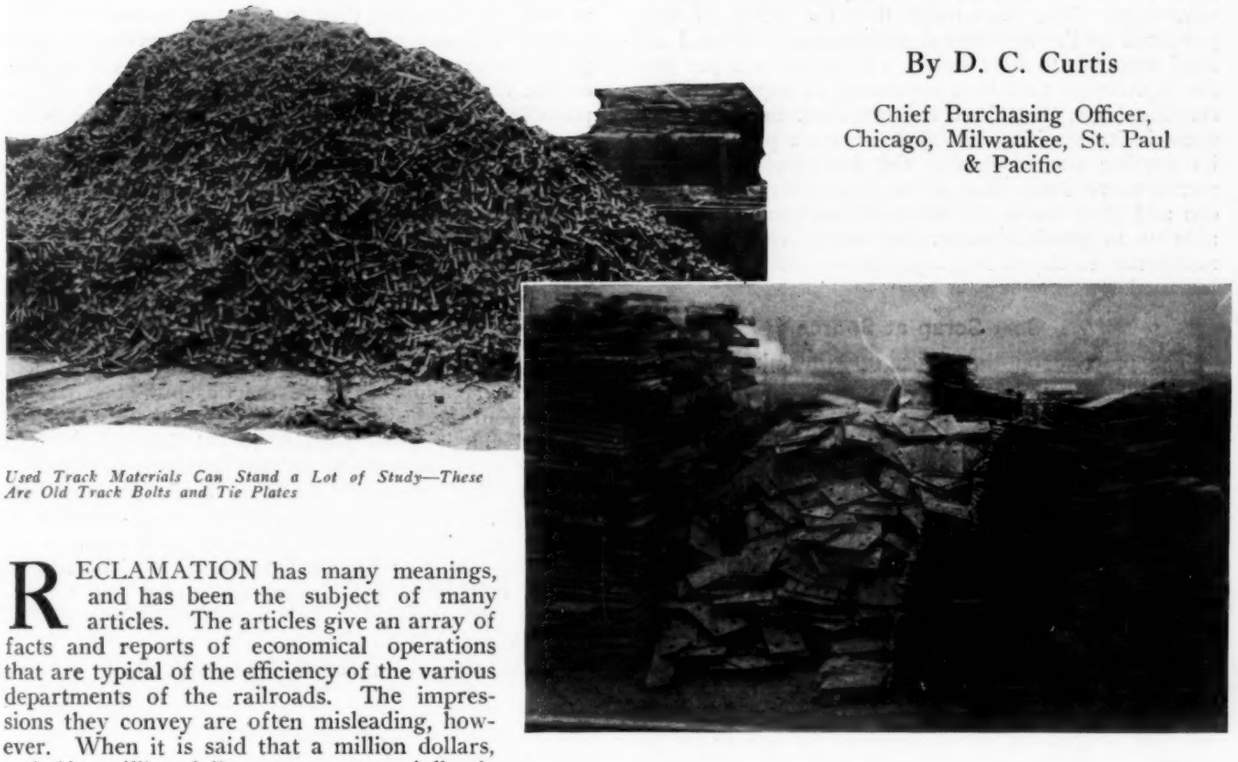
FOLLOWING HIGHLY SATISFACTORY RESULTS from the electrification of the 285-mile Stockholm-Gothenburg line of the Swedish Government Railways (described in the *Railway Age* of March 5, 1927, page 665), the Swedish Railway Board is submitting a preliminary plan for the electrification of the main line of the Government Railways from Stockholm to Malmo and Trelleborg (391 miles), according to an article in Modern Transport (London). A number of branches, chiefly those connecting the Stockholm-Gothenburg and Stockholm-Trelleborg routes, are also included in the scheme. If the general plan is accepted it will be laid before the Riksdag at its next session, with the idea of starting work in July, 1931, and completing the project during 1934. It is believed that the project will effect an annual fuel saving of about 120,000 tons of coal and additional direct and indirect operating economies while at the same time increasing the capacity of the road. Power would be supplied by government owned stations and by the Sydsvenska Kraftaktiebolaget.

The Reclamation and Handling of Track Materials*

Economy of centralized plants challenged—Milwaukee's methods described—Budgets advocated

By D. C. Curtis

Chief Purchasing Officer,
Chicago, Milwaukee, St. Paul & Pacific



Used Track Materials Can Stand a Lot of Study—These Are Old Track Bolts and Tie Plates

RECLAMATION has many meanings, and has been the subject of many articles. The articles give an array of facts and reports of economical operations that are typical of the efficiency of the various departments of the railroads. The impressions they convey are often misleading, however. When it is said that a million dollars, or half a million dollars, or even one dollar is reclaimed from waste material, it conveys the thought to some that the user or supervisor is extravagant when such amounts can be taken from what has been discarded.

Analysis of these articles discloses that the operations of the various plants are just efficient methods for putting worn and broken material in usable condition. They show that there is not any waste and that the most economical methods are used in getting all the use and value possible from each piece of material used.

There is much room for improvement, however, in reclaiming material at the original point of origin, or rather using material to destruction and then selling it direct for scrap. A track spike thrown into the scrap bin, picked up by a scrap car, hauled many miles to a scrap dock, dumped out in a pile, picked up and thrown into another pile, then moved by machine, or by hand, to a place where it can be put into a container, moved from there to the storehouse, from the storehouse to a supply train, hauled back many miles, and then returned to the point where it originated is expensive. New track spikes cost $56 a ton. Scrap track spikes are worth $15 a ton, which leaves $41 a ton to transport them, handle them three to five times, and pay for the way-car mileage. A track spike is not a new spike when it is reclaimed, however, but a second-hand track spike. If the throat is cut, the section man, after he has driven the spike home, may strike the head sideways to bring it against the rail. In so doing, he enlarges the hole in the tie, which produces an opening that will admit water. This promotes the decay of the tie, and the savings of the reclamation work may thus be offset. If reclaimed tie plates prove destructive to the ties, they also produce a loss. Thus, many reclaimed items that are thought of as producing savings may cause a loss instead.

D. C. Curtis

There is a greater need for laboratories where materials can be studied and tested than for many reclamation plants. A laboratory in which track material could be tested to destruction should demonstrate the usefulness of many materials at a fraction of the cost of trying them out in service. They should eliminate the necessity of reworking much material in the reclamation plants.

It has been found more economical to recondition rail at centralized plants. It is interesting to observe that when commercial plants were first organized for resawing rail, they charged as high as $2.50

* From an address before the Maintenance of Way Club of Chicago in Feb., 1930.

and $3 a ton and kept the crop ends, while today they pay for the privilege of doing the work, provided they are allowed to keep the crop ends. The saving in the cost of rail programs resulting from the operations of centralized rail plants, is very large and the reforming of angle bars in centralized plants with adequate furnaces, presses, etc., is equally productive of economies.

"Scrap" is another word that is a misnomer. It refers, in a general way, to materials that have served their usefulness and must be disposed of to the best advantage. The knowledge that the value of scrap produced by the roadway department of a Class I railroad amounts to over half a million dollars per year, the knowledge that it is necessary to separate it into classifications, that there are large amounts of money spent in its handling and that there are possibilities of its further use emphasize the fact that this subject merits more study than it has been receiving. If we can add $1 a ton to the value of the scrap, it will enable us to provide money for many very important additional money-saving operations which should be installed.

Sort Scrap at Source

The practice on the Chicago, Milwaukee, St. Paul & Pacific is to sort the scrap to classification behind each extra gang. With three or four cars in the pick-up train, the scrap, properly classified, is loaded into the proper car and when the cars are full, they are shipped to the nearest storekeeper who weighs them, applies the scrap on sale orders and ships the cars direct to the purchaser. This has eliminated the practice of loading the scrap mixed, shipping it to a scrap dock, unloading it, sorting it, reloading, and often hauling it back over the same track to the purchaser. Scrap boxes are also being installed at the various section houses, where the largest percentage of the scrap may be sorted to the proper classification and loaded into a car in the supply train and then turned over to the nearest storekeeper for direct shipment by him to the purchaser.

The A. R. A. has adopted a scrap classification which has been approved by the Scrap Dealers Association. The classification divides scrap into 76 classes. The largest percentage of track scrap falls into four classifications, however, which makes it practical to have the section forces sort a large proportion of their scrap at the point of origin.

Material Budgets Advocated

A study to reduce the costs of material and its use, however, should begin before the material is ordered. The authority to obtain materials is granted after the plans and specifications have been developed. As soon as the authority is granted, there is much pressure to complete the work at the earliest possible moment. It is necessary to procure the material without delay and, in many cases, there is confusion and increased cost. Under normal conditions, it requires about 60 days to make a requisition, check the stock, send out inquiries, place orders, have a manufacturer make the material and move it by freight to its destination. A budget of requirements is, therefore, very necessary in meeting material problems in the most economical manner. The fact that it takes over 60,000 freight cars to handle company material in and out of one road's storehouses each year shows that the handling of company material is a large contract.

It is practicable after a rail program has been approved to make up a budget and program the purchase of rail fastenings. The roadway forces know when they will start work with the various gangs, the number of men in each gang, the number of feet of rail per day they will lay, and the number of spikes, angle bars, track bolts, rail anchors and switch material they will use. Correspondingly, it should be possible to work out a plan whereby the store department can move a large percentage of the material direct from the mill to the work and have it there at the time that it is wanted and in the quantities wanted. Such a plan enables the purchasing department to obtain the material at mill prices, rather than to pay a premium, and eliminates all unnecessary handling and unnecessary transportation over the railroad. It also assures the delivery of the material in as nearly perfect condition as it is possible to supply it. The same thing is true of bridge programs, concrete pipe programs, signal programs, etc. A budgeting plan will not be 100 per cent efficient in the first year, but each year will see an improvement in the proportion that such a plan receives study.

Machine Methods Coming

Ties are the second largest single item of expense on a railroad and present many problems in their purchase, treatment and distribution that also require constant study and new methods to meet changing conditions. It is now possible to move the ties into the treating plant from the producers at the rate that they are being treated, but it is not possible to put them in the track at this rate, particularly on our northern railroads, so we must find a means of handling the ties most economically from the treating plant to their application in the trade. It is probable that railroads will soon be distributing the ties by machine power. Concentration yards, machinery for loading and unloading, and the proper protection of material are all subjects that require a great deal of study. They are worthy of the greatest amount of discussion that can be given to them.

* * *

A Close-Up Front View of a D. L. & W. 4-8-4 Freight Locomotive

Why Do Intermediate Manganese Steel Rails Fail?

By H. H. Morgan and J. R. Mooney*

As a result of the failure of a large number of intermediate manganese steel rails after about one year of service, an investigation of head failures in such rails was undertaken by the Robert W. Hunt Company early in 1929. Although the work is not yet completed, the results obtained so far are of particular significance at this time.

Most of the head failures in intermediate manganese steel rails occur as split heads, such as shown in Figs. 1 and 2, the vertical splits occurring indiscriminately in both the gage and field side of the head. These failures occur principally in tracks where the rail service is unusually severe and, although they are not of a dangerous type because they develop slowly and are easily detected by the track-walkers in the early stages, they rarely result in broken rails. They are expensive, however, because of their number, and are a barrier to economical use of intermediate manganese steel rails for heavy service.

In a study of the service records of more than 100 of these failures, it was found that certain heats were particularly susceptible to split heads, and that the problem did not depend on the characteristics of individual rails, but on the characteristics of certain heats and, possibly of intermediate manganese steel in general. For this reason, we first made a study of new carbon steel and of new intermediate manganese steel, and then of failed intermediate manganese steel. We obtained complete information as to the chemistry, production practice, physical properties, and micro-structure for each of these materials. With this information as a basis, attention was then concentrated on certain individual failed rails that seemed to offer the best possibilities of providing the evidence which was sought.

More than 50 samples of rails were obtained, the failed rails being selected from heats that had shown the largest number of failures. The new rails in this group were of the same section and from the same mill as the failed rails, and at the time they were obtained the production practice was nearly the same as when the failed rails were rolled.

The chemical analyses are given in Table I. It is important to note that, without exception, the failed rails contained carbon and manganese in the upper part of the range, while some contained these elements much in excess of the ladle tests and the specification limits.

Recognizing that these failures were connected definitely with the characteristics of certain heats, and possibly of intermediate manganese steel per se, the production practice was studied carefully. At the time that these failed rails were rolled, it was the practice of the mills that produced them, to add about 1,000 lb. of cold ferro-manganese to the ladle when making carbon steel. For the production of intermediate manganese steel, part of the additional manganese that was required was sup-

Table I—Chemical Analyses of New and Failed Rails

Specimen	No. of rail	Position of drillings	C	Mn	P	S	Si
New Carbon Rail	125	O	.75	.74	.023	.028	.28
		M	.73	.77	.024	.026	.29
		Ladle Test	.72	.76	.026	.028	.26
New Carbon Rail	140	O	.75	.69	.023	.029	.22
		M	.75	.70	.027	.035	.21
		Ladle Test	.74	.72	.025	.030	.20
New I. M. Rail	126	O	.58	1.38	.022	.025	.16
		M	.59	1.42	.020	.026	.15
		Ladle Test	.59	1.46	.023	.030	.16
New I. M. Rail Failed	131	O	.59	1.32	.020	.026	.18
		M	.61	1.33	.019	.024	.19
		Ladle Test	.57	1.43	.021	.025	.18
Failed		O	.63	1.75	.037	.021	.22
Failed		O	.62	1.70	.040	.027	.23
I. M. Rail Failed	107	M	.61	1.72	.037	.028	.22
		Ladle Test	.60	1.57	.035	.030	.19
		O	.69	1.63	.024	.022	.22
I. M. Rail Failed	92	M	.66	1.59	.024	.022	.22
		Ladle Test	.65	1.59	.030	.022	.20
		O	.61	1.53	.027	.026	.22
I. M. Rail Failed	93	M	.58	1.50	.024	.025	.23
		Ladle Test	.61	1.44	.031	.025	.18
		O	.65	1.45	.029	.026	.28
I. M. Rail Failed	94	M	.71	1.52	.032	.032	.28
		Ladle Test	.63	1.50	.032	.025	.23
		O	.66	1.41	.028	.025	.21
I. M. Rail Failed	95	M	.65	1.46	.026	.022	.20
		Ladle Test	.65	1.48	.030	.029	.16
		O					
I. M. Rail	735	M	.73	1.61			
		Ladle Test	.63	1.47	.034	.024	.15

* Both of the Robert W. Hunt Company, Chicago, Mr. Morgan being manager, Railway and Fastenings department.

Fig. 1—Rail No. 95 after Etching with Hot Hydrochloric Acid. A Number of Small Cracks, Opened by the Etching, Can Be Seen

Fig. 2—Rail No. 93 after Etching with Hot Hydrochloric Acid, Making Numerous Small Cracks Visible

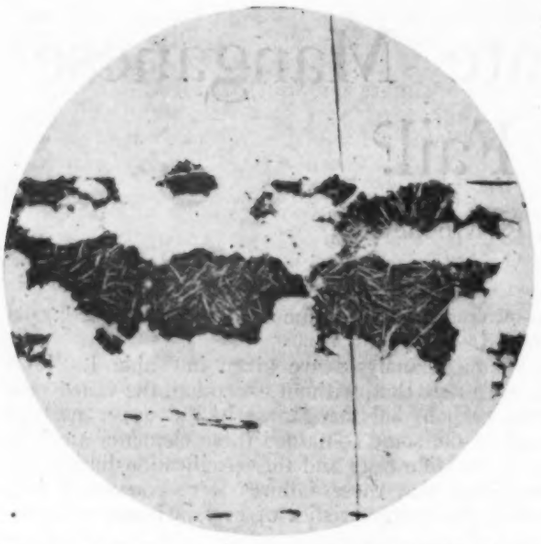


Fig. 3—Rail No. 106 x 100. Etched with Alkaline Sodium Picrate. Needle-like Crystalline Structure is Martensite. The Scratch which Barely Penetrates this Area Indicates its Hardness. A Small Crack Was Visible in the Martensite Streak (See Fig. 4.)

Fig. 4—Rail No. 93 x 500. Cross Section of a Martensite Streak Showing the Crack Which Has Split It

plied in this form, while more than twice this amount of cold ferro-manganese was added to the ladle, this being the only difference between the production of carbon and intermediate manganese steel. The practice on the failed heats seemed to be no different from that on heats giving satisfactory service.

The inspection data showed that the heats that subsequently failed usually contained carbon and manganese in the upper half of the range, that they were a little harder than the average, and that at the drop test, they displayed a little less ductility than the average.

The appearance of many of the split heads suggested that intermediate manganese steel might be weak in shear or transverse tensile strength. To determine that this surmise was correct, tests were made on specimens cut from transverse, longitudinal, and vertical positions, the axes of which intersected in the center of the head ¼ in. above the line drawn through the lower corners of the head. This necessitated specimens not longer than the width of the head, and to allow this, the tensile specimens were reduced to 0.25 in. in diameter with 1-in. gage length and 0.5-in. threaded ends.

The ultimate strength of the material in shear was obtained by twisting hollow torsion specimens with a gage length of 1 in., an outside diameter of 0.377 in. and walls 0.03 in. thick. Owing to the thinness of the walls, the ultimate strength could be computed with sufficient accuracy by the usual torsion formula.

The transverse torsion specimen gave the shear strength of the material in a transverse longitudinal plane parallel to the plane of fracture of horizontal split heads. No longitudinal specimen was tested.

The Brinell and Rockwell tests were made on flats ground on the ends of the broken tensile specimens, and the values given in Table II are the mean of the readings on the three specimens, while each tensile and shear value represents a single specimen.

The impact tests were made in a Charpy machine, the specimens being 2.17 in. long and 0.394 in. square, with a notch formed by cutting through to a No. 47 drilled hole, located 0.158 in. from the edge. In the transverse impact specimen, the axis of the notch was longitudinal, with the notch opening toward the top of the rail. In the vertical impact specimen, the axis of the notch was longitudinal, with the notch opening toward the side of the rail. Each value is the average of two tests.

When considering the data in Table II, the chemistry of the specimens must also be considered. The new carbon steel is very close to the middle of the range of carbon and manganese, while the new intermediate manganese steel is near the lower limit, so that this might be expected to have less ultimate strength and hardness but more ductility. This was found to be the case, except that the new intermediate manganese steel showed a

Table II—Physical Characteristics of Six of the Specimens Tested

Specimen	Number of rail	Position of specimen	Ultimate tensile strength, lb. per sq. in.	Per cent elongation in 1 in.	Per cent reduction in area	Type of fracture	Ultimate shear strength, lb. per sq. in.	Type of fracture	Brinell hardness	Rockwell C hardness	Charpy impact strength, ft. lb.
New	125	T	* 73700	0.0	0.0	Crystalline					
Carbon		L	131000	6.5	11.7	Ragged	83200	Shear			1.63
Rail		V	140500	6.0	10.9	Crystalline			233	28	
New		T	128320	4.0	6.3	Crystalline	77600	Tensile			1.54
Carbon	140	L	135450	11.0	11.6	Crystalline	85700	Shear			1.63
Rail		V	135860	7.0	11.6	Crystalline			232	24	
New		T	132500	8.0	16.8	Crystalline	86400	Shear			1.37
I. M.	126	L	134800	10.5	14.8	Crystalline	73100	Tensile			1.84
Rail		V	132000	10.0	21.2	Crystalline			217	28	
New		T	125470	7.0	9.4	Crystalline	77500	Tensile			1.98
I. M.	131	L	128770	15.0	22.5	Crystalline	81900	Shear			1.72
Rail		V	124860	10.0	24.7	Crystalline			200	21	
Failed		T	128000	11.5	21.0	Crystalline	85600	Shear			1.89
I. M.	107	L	143300	9.5	10.0	Crystalline	51400	Tensile			1.42
Rail		V	66700	0.0	0.0	Crystalline			239	27	
Failed			54300	0.0	0.0	Crystalline	40500	Tensile			2.11
I. M.	94	L	145500	8.5	10.8	Crystalline	54500	Tensile			1.36
Rail		V	78600	0.0	0.0	Crystalline			232	31	
						Crystalline	40200	Shear			1.78

* This specimen contained a flaw in the steel.

greater increase in ductility than the chemistry accounts for. The per cent of elongation, the reduction of area, and the results of the impact tests all show that these particular intermediate manganese rails were slightly tougher than the carbon rails, even when the correction for chemistry is made, and that the intermediate manganese steel displayed no transverse tensile or shear weakness.

When the tensile specimens cut from the failed rails did not fail utterly, they exhibited strength and ductility approximately the same as the new rails, considering the difference in chemistry. The shear strength of the failed rails was decidedly poor, however.

An interesting characteristic of rail steel, including both carbon and intermediate manganese, brought out by these tests, is its exceedingly small Charpy impact strength.

All sulphur prints made of the rails indicated a fairly uniform distribution of sulphur and phosphorus and contributed nothing to the results of the investigation. Cross-sections of the new rails, when etched with hot hydrochloric acid, showed a uniform structure, but when the failed rails were etched, Figures 1 and 2, numerous cracks appeared, showing irregularity in structure.

The micro-structure of the new carbon rails was lamellar pearlite in a ferrite net-work which is so well known that no illustration of it is given. The new intermediate manganese rails exhibited pearlite with very little ferrite. The pearlite was not distinctly lamellar, but distorted, and in spots approached spheroidization. The failed rails exhibited pearlite, with occasionally a very small amount of ferrite, but more often none at all and the pearlite was in the same distorted condition as in the new intermediate manganese rails.

Rail 106, when etched with hot acid, showed the cracks typical of the failed rails, and from the piece etched, a micro-specimen, Fig. 5, was prepared so that the polished surface was at right angles to the etched surface. When this was done, one of the cracks opened up by etching could be traced. It was found to be principally intercrystalline, and near it were many small cracks. The transverse longitudinal surface of the micro-specimen from rail 107 showed a streak of martensite with a crack running through it, similar to that shown in Figures 3 and 4. Martensite is a very hard and brittle constituent which has always been regarded as detrimental where ductility is essential.

Having found microscopic cracks and martensite in some of the failed rails, others were examined, including the new ones, for the same conditions. It was realized that, since it was impracticable to examine the entire cross-section of rails with a microscope, it was important to develop some method of locating the martensite and the cracks. By experimenting with the specimen showing the martensite streak, it was found that, if the surface was polished with No. 0 French emery and then etched for several minutes with a 4 per cent picric acid solution, the entire structure, except the martensite, was blackened, and by throwing light on the specimen in the proper way, the martensite stood out brilliantly. Figure 6 shows a rail etched in this way, and in the lower central portion of the head and at the juncture of the head and web, there may be seen a cluster of small white spots which are areas of martensite.

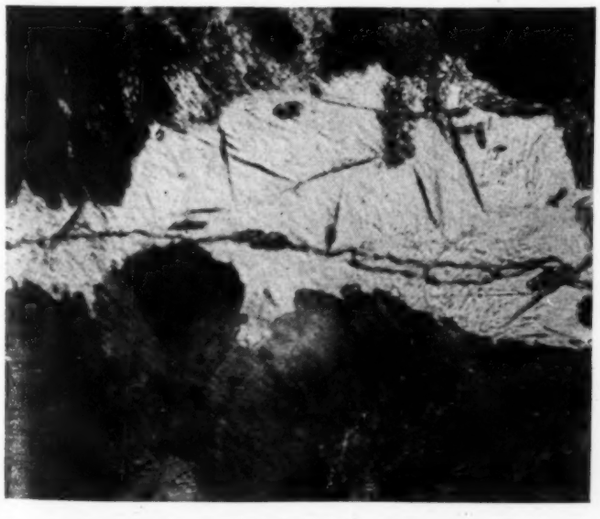


Fig. 5—Rail No. 106 x 1000. Etched with Nitric Acid. The Crack in the Martensite Streak Is Plainly Visible

Fig. 6—Rail No. 107, Etched with Picric Acid to Detect Martensite, which Shows as White Spots near Center of Head and at Junction of Web and Base

Applying this method to all the rails, it was easy to locate martensite in all the failed rails, but none in the new rails.

After locating the martensite in the failed rails, micro-specimens were cut at the proper locations, and it was found that the martensite was in the form of streaks from ½ in. or less to at least 2 in. long, extending longitudinally through the rail. The form and position of these martensite streaks is similar to that of small sewing needles set lengthwise in the rail. They occur in all rails of the ingot, but only in the portions of the rail section that are near the center of the original ingot section. Figure 4 shows the cross-section of one of these streaks, while the crack that usually was found splitting them, is very prominent.

It was found that the most effective method of locating the small cracks, was to locate martensite by the method described, and then examine the region for cracks. They were usually found, and, in a few cases, when cracks were discovered first, they led to martensite. No unusual non-metallic inclusions were found in any of the rails, and such inclusions as occur seem to bear no relation to either the cracks or martensite.

The data obtained in this work indicate that intermediate manganese steel has approximately the same tensile strength, and the same shear strength and hardness as carbon steel, but that it is somewhat tougher. Intermediate manganese steel containing carbon and manganese in the lower portion of the range is very close

to eutectoid composition, and steel with these constituents in the upper portion of the range is at or above eutectoid composition. Certain heats are particularly susceptible to head failures and these heats usually contain carbon and manganese in the upper portion of the range. Failed rails from these heats contain microscopic cracks and martensite, the latter in increasing quantities as the carbon and manganese contents increase.

From the work done so far, we are sure that the head failures in intermediate manganese rails have their origin in the microscopic cracks in the streaks of martensite which were found in the failed rails. Whether such cracks and streaks of martensite are characteristic of all intermediate manganese steel that is high in carbon and manganese must be determined by further investigating particularly rails which have given good service in the track. We hope, eventually, to determine definitely whether the conditions that have been found exist in all intermediate manganese steel of higher carbon and manganese content, and also the cause of the conditions which have been discussed.

"Reciprocity" Hearings Shift to Detroit and Cleveland

THE Federal Trade Commission continued its hearings at Detroit, Mich., on February 27 and at Cleveland, Ohio, on February 28, on the use made of its traffic by Swift & Company to sell to the railroads equipment of the Mechanical Manufacturing Company.

W. C. Atherton, purchasing agent of the Pere Marquette, testified at Detroit that the Pere Marquette bought 100 sets of Durable gear of the Mechanical Manufacturing Company in February or March, 1929, following the receipt of correspondence by his traffic department from the traffic department of Swift & Company and a conference with the traffic manager and superintendent of motive power of the Pere Marquette, which was attended by R. O'Hara, traffic manager of Swift & Company. When asked if any tests of the gear had been made, he said, no, although he thought the Mechanical Manufacturing Company might have showed the superintendent of motive power some tests.

Mr. Atherton said that a letter guaranteeing the gear from defects in material and workmanship had been received but there was no "time guarantee" similar to that provided by the manufacturers of the other makes of gear used on the Pere Marquette. In reply to questions he testified that the Pere Marquette had paid $59.33 a set, f.o.b., Passaic, for 1300 sets of Murray gear and $66.93 a set for 100 sets of Waugh gear bought at the same time. When asked if the gear were bought on the basis of price and quality, he answered that they were bought for test.

R. J. Williams, superintendent of motive power of the Pere Marquette, testified that he had recommended the purchase of the Durable gear for test purposes after talking with R. O'Hara, traffic manager of Swift & Company, and also with a representative of the Mechanical Manufacturing Company who accompanied Mr. O'Hara. He said that his attention had been called to the result of some tests made by the Mechanical Manufacturing Company. He said he afterwards talked to the president of the road (ex-President Alfred) and, when asked if he thought well enough of the gear to try them out, said he approved buying 100 sets of the Durable gear along with 100 sets of the Waugh gear which was another new type gear for the Pere Marquette, applied to 55-ton gondola cars.

The hearing then reverted to a consideration of the evidence produced in previous hearings, purporting to show that Swift & Company had withdrawn traffic from the Northern Pacific because of the latter's failure to buy a satisfactory quantity of draft gear. C. L. Fenstermaker, traffic manager of the Sutherland Paper Company, Kalamazoo, Mich, one of the companies considered before, testified that the Sutherland Company made cartons and folding box board for butter, bacon, etc, and had supplied Swift & Company for many years, including the Portland, Ore., district. He testified that he had customarily shipped some of the Portland business over the Northern Pacific up to October, 1929, when instructions were received from Swift & Company to route all of it another way He said that most of this business was sold on a delivery price, under which the manufacturer paid the freight to destination and also testified that he had heard no complaints of Northern Pacific service and also that, when the routing request was made, he raised an objection, but he said that Swift & Company were valued customers of theirs and that the Portland business was routed in accordance with that company's request.

At the Detroit hearing there were put into the record letters and telegrams between Richard O'Hara, traffic manager of Swift & Co., who described himself as "the only salesman the Mechanical Manufacturing Company has," and C. M. Booth, freight traffic manager of the Pere Marquette. On December 27, 1928, Mr. O'Hara wrote to Mr. Booth referring to the Durable draft gear and asking him to let him know "what action it is necessary for me to take to secure an order from the Pere Marquette for some of this equipment." Mr. Booth replied on January 18 saying he had discussed the matter with the purchasing department and the superintendent of motive power, R. J. Williams, and that "the next move, I think, is for one of your salesmen to get in touch with Mr. Williams and sell him on the advantages of the Durable. He has our recommendation from a traffic standpoint." Mr. O'Hara then replied by wire, saying he was the only salesman and asking an opportunity to discuss the matter with Mr. Booth and Mr. Williams. There was another letter from Mr. Booth to Mr. O'Hara stating that Mr. Williams had told him that the road had made the Murray draft gear standard but that it was being solicited by representatives of several manufacturers for some new cars about to be built. He suggested that the Mechanical company have its mechanical men go to Detroit and go into the merits of the gear with Mr. Williams. On January 24 Mr. O'Hara telegraphed that he and Mr. Gaebler would be in Detroit and would like to see Mr. Williams.

The hearing at Cleveland was confined to testimony from the Wheeling & Lake Erie. George Durham, vice-president and general manager, testified that he had been solicited by R. O'Hara, traffic manager of Swift & Company, about January 18, 1929, to equip 1,100 proposed cars with the Durable gear. He had H. A. Macbeth, superintendent of motive power, look over the drawings and then authorized the purchase of gear for 100 freight cars. When asked how the price compared with other gear, he said it cost six or seven dollars more to equip a car than with the other gear bought that year. He said he discussed Swift & Company traffic with Mr. O'Hara and was given to understand that there were some shipments of phosphate rock in which his road might participate, adding that he was very much interested in traffic matters. When asked by

(*Continued on page 608*)

C. & E. I. Train Drawn by Test Locomotive No. 2006

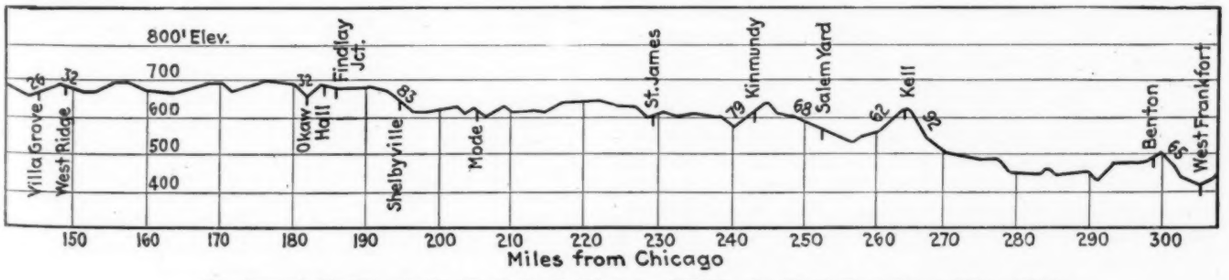
Chicago & Eastern Illinois Makes Locomotive Fuel Tests

Mechanical stoker and Hulson Tuyere-type grates facilitate burning 1¼-in. screenings—Slightly reduced efficiency as compared with mine-run coal

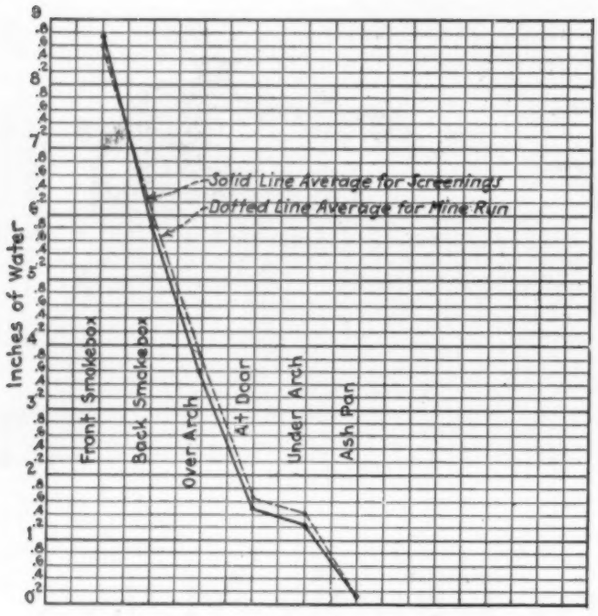
SOME recent carefully supervised road tests of Chicago & Eastern Illinois steam locomotives demonstrate that, with mechanical stoker equipment and Hulson Tuyere-type grates, it is entirely feasible to burn 1¼-in. screenings at slightly reduced efficiency as compared with mine run. The tests showed that, considering coal as purchased by weight, 1¼-in. screenings are 97.3 per cent as efficient, on a gross ton-mile basis, as run-of-mine coal from the same mine in Franklin county, Southern Illinois. On an evaporation basis, the screenings are only 92.6 per cent as efficient. Rating the two fuels by their B. t. u. value, the efficiency of the screenings is 99.8 per cent on a gross ton-mile basis and 94.7 per cent on an evaporation basis. In both cases, in calculating the relative efficiency of the screenings on an evaporation basis, the steam used by the stoker has been deducted in order to compensate for the slightly larger amount of steam used by the stoker in firing the mine-run coal.

While the tests indicate that screenings are not quite as economical as mine-run, from an efficiency standpoint there are other factors which must not be overlooked, including the reduced wear on stoker machinery, less labor for handling screenings at coal chutes and lighter fuel beds which reduce time and labor at cinder pits.

Other conclusions drawn were that C. & E. I. 2-10-2 type Locomotives 2000 to 2006, one of which was used in the tests, are satisfactory for fast freight service; that no change in draft arrangement is required to burn screenings, as compared to mine run; that practically complete combustion, freedom from smoke, minimum stack and ash pan loss are assured; that higher firebox temperatures, up to 2,500 deg. F., with screenings will subject the firebox sheet to harder service; that the proper valve setting for these locomotives in fast freight service is 3/16-in. lead and ⅛-in. exhaust clearance; that a power reverse gear providing accurate and fine adjustment of the cut-off, permitting operation with a wide-open throttle, is essential; that the locomotive will travel 4.94 miles per 1,000 gals. of water, based on the



Condensed Profile of the C. & E. I. Line on Which the Fuel Test Runs Were Made



Comparative Average of All Draft Readings Taken on Locomotive 2006

average of northbound trips, or 4.37 miles per 1,000 gals. of water, based on the maximum amount used on any trip. Subsequent tests showed that screenings from other parts of Illinois and Indiana can be burned in locomotive service with successful results.

The tests were conducted in regular road freight service, southbound and northbound on the C. & E. I. between Villa Grove, Ill., and West Frankfort. Mixed trains up to 3860 gross tons were handled northbound and a lighter movement southbound. While making the tests, a caboose was operated next to the locomotive for

Analysis of Coal Used in the Test Runs

	Screenings	Mine run
Water	3.12 per cent	6.36 per cent
Ash	11.56 per cent*	6.26 per cent
Volatile	21.08 per cent	37.32 per cent
Fixed carbon	64.24 per cent	48.89 per cent
Sulphur	1.77 per cent	1.17 per cent
B. t. u. per lb.	11,646**	11,940**

* Sulphur is included in ash percentage.
** B. t. u. values based on coal as received.

the convenience of observers and the C. & E. I. officers in direct charge of the test. The latter included J. F. Lord, assistant to the general manager; E. M. Cooney, motive power inspector, and S. A. Schickedanz, mechanical engineer, who personally took all readings and supervised all changes and adjustments made on the locomotive. A representative of the Hulson Grate Company, Keokuk, Ia., and a lubrication expert from the Sinclair Oil Company accompanied all test runs.

All measurements of coal and water consumption were made with the greatest practicable accuracy; also steam pressure, back pressure, draft readings and firebox and smokebox temperatures, the latter being secured by means of a pyrometer furnished by the Superheater Company. A total of ten one-way trips were made burning screenings and six one-way trips burning mine-run coal. The test locomotive was just out of the shop and was not fully broken in, so that it required a number of adjustments before giving satisfactory performance. Therefore, the first two round trips, burning screenings, were eliminated from consideration, leaving six one-way trips with each grade of coal.

The 2-10-2 type locomotive, No. 2006, with which the tests were made, develops 71,900 lb. tractive force with a steam pressure of 185 lb., but prior to this test the steam pressure was raised to 195 lb. The locomotive weighs 290,800 lb. on the drivers, has 30-in. by 32-in cylinders, 132-in. by 96-in. firebox and is equipped with a Baker valve gear, power reverse gear and Duplex stoker.

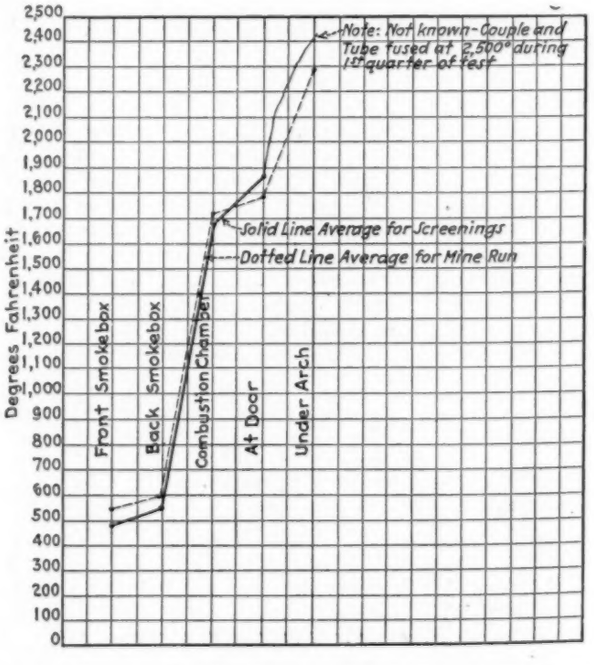
By means of a 12-in. Ellison draft gage located in the cab, the following draft readings were taken: Smokebox, front; smokebox, back; firebox, over arch; firebox, at door; firebox, under arch; ash pan. The firebox and smokebox temperatures were measured by

Average Unit Coal and Water Consumption (Coal as Fired)

	Lb. water (as measured) per lb. of coal	Lb. water (equiv. evap.) per lb. of coal	Lb. coal per m.g.t.m.
Screenings			
Southbound	4.98	6.12	153
Northbound	5.36	6.58	93
Both ways	5.19	6.37	113
Mine Run			
Southbound	5.52	6.79	164
Northbound	5.76	7.07	87
Both ways	5.65	6.94	110

a pyrometer which gave temperature readings at the following points: Firebox, under arch; firebox, door; combustion chamber; smokebox, back; smoke box, front.

An Elesco superheater pyrometer, located in the cab and connected to the left steam pipe above the valve chamber, gave the superheat temperature. An Ashcroft back pressure gauge, located in the cab, gave readings of the steam pressure of steam entering the cylinder and the pressure of exhaust steam in the exhaust passages of the cylinder. Necessary data on tonnage was obtained to calculate gross ton-miles hauled on each trip. New main rods and new front intermediate side rods with floating bushings were applied, replacing old rods with solid bushings which had a tendency to run warm and were relatively heavier. Hulson Tuyere-type grates were applied instead of the original finger-type. The counterbalance was carefully checked and adjusted to obtain counterbalance of 50 per cent of the reciprocating parts, this being greatly improved by the new rods. The brick arch was sealed at the throat sheet.



Average Comparative Firebox and Smokebox Temperatures of Locomotive 2006

The amount of coal burned was determined by cutting the tender off the locomotive at the end of each trip at Villa Grove and West Frankfort and weighing before and after loading with coal. En route on each trip, coal was added at Salem from a weighed car. This car was reweighed after the coal had been applied to the tender, thus getting the weight of the coal added.

The amount of water evaporated was obtained by a measuring stick calibrated to show pounds of water in the tender for any depth of water. Measurements were taken at the beginning and end of each test and at intermediate points en route where water was taken. Deductions were made for water wasted in starting injectors and water wasted by squirt hose in wetting down the deck of the locomotive and coal. The time safety valves popped was also obtained for deducting the steam wasted in obtaining the fuel used on a g.t.m. basis. This figure was negligible and not used.

Practically no difference was noticed in the steaming qualities of the locomotive when using the screenings and the mine-run coal. The mechanical stoker and Hulson Tuyere-type grates contributed to the good performance with screenings. The screenings burned in the same manner on this locomotive as on Mikado locomotives in previous tests. A considerable portion of the screenings seemed to burn in suspension, with a fuel bed about 4 or 5 in. deep, consisting of the larger pieces of coal from the screenings. With mine-run coal, less fuel seemed to burn in suspension, a somewhat thicker fuel bed was maintained, and the fuel bed gave the appearance of having more air openings, because of the larger pieces of coal.

No check was made of cinder loss, but, from general observation, no increase of cinders thrown from the stack was noted with screenings over the amount noted with the mine-run coal. It was noted that with a strong wind more coal was blown from the tender when using screenings than when using mine-run coal.

The air resistance through the lighter fuel bed with screenings was the same as for the heavier fuel bed of mine-run coal.

The draft readings taken did not show any appreciable difference between screenings and mine-run coal. There was a slight increase in draft under the arch directly over the fire, indicating possibly a slight increase in resistance of air through the fuel bed with mine-run coal. A considerably higher draft reading was noted in the smokebox on the Santa Fe locomotive than on Mikado locomotives in previous tests. This was partially due to the exhaust nozzle being somewhat small. The nozzle diameter was increased to 7¼ in. diameter with spuds after the test was completed and the locomotive steamed satisfactorily. A portion of this higher draft was required on account of the greater length of flues, giving higher resistance to gases passing through them. The low draft readings obtained in the ash pan indicated that it had ample air openings.

Table Showing Maximum Temperatures (Deg. F.) Reached at Various Points in the Locomotives

	Screenings	Mine run
Firebox, under the arch	2500*	2440
Between arch and door sheet	2020	1950
In combustion chamber	1900	1900
Smoke box—Back of defl. plate	600	600
Smoke box—Front end	510	510

* At this temperature the pyrometer couple burned off.

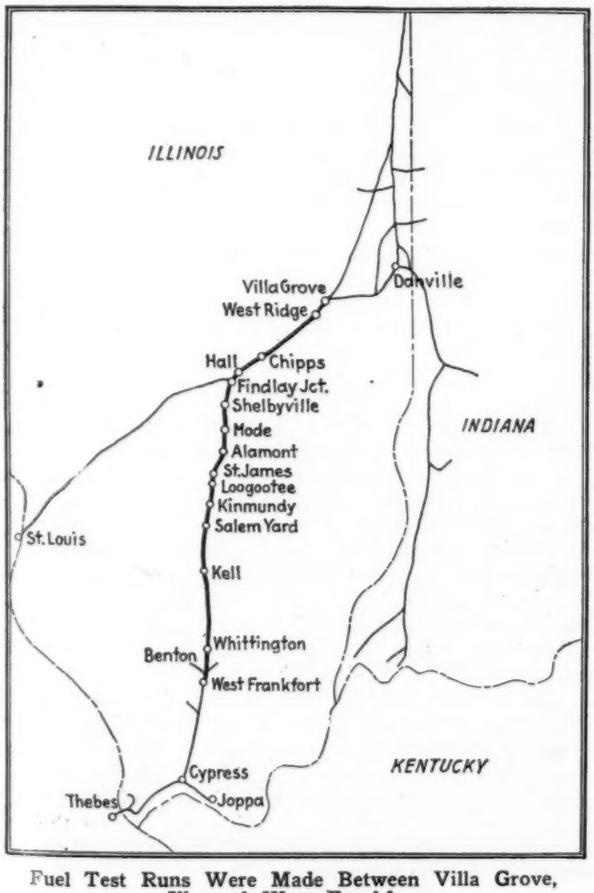
It was somewhat more difficult to build the fire with screenings than with mine-run coal, and greater care was required to get the fire in good condition at the beginning of the trip. Aside from this, it was not more difficult to maintain steam pressure with screenings than with mine-run coal.

The Tuyere-type rocking grates, with small air openings totaling 38 per cent, in vertical planes only, reduced the loss of fuel through the grates to a minimum. The grates operated easily, removing the necessary amount of ash when rocked en route without excessively breaking up the fuel bed. The operation and functioning of these grates, when dumping fires at the cinder pits, was satisfactory. The small air openings in the grates permitted carrying thin and light fuel beds with an equal and fine distribution of air to all parts of the grate without holes forming in the fuel bed. It is not probable that the screenings could have been successfully burned in this locomotive on the original type finger grate, which also necessitates a smaller nozzle with corresponding loss in power of the locomotive, due to additional back pressure.

The average speed on two trips with screenings and two trips with mine-run coal was 30.5 miles an hour and 33.2 miles an hour respectively. After the above test runs were completed, a trial run was made from Villa Grove to Mitchell yard on fast freight, and a speed of 58 miles an hour was obtained.

A trial trip was also made from Mitchell Yard to Villa Grove and from Villa Grove to Yard Center. On the trip from Mitchell Yard to Villa Grove on train No. 60, the locomotive did not attain any high speed, but from Villa Grove to Yard Center, the locomotive attained a speed of 60 miles an hour.

At no time during the tests did the locomotive develop any hot bearings and at all times, the new rods with the floating bushings ran cool. The locomotive rode smoothly; no excessive vibration was noted at high speeds, indicating good counterbalance conditions.



Fuel Test Runs Were Made Between Villa Grove, Ill., and West Frankfort

N. Y., P. & C. Counsel Answer I. C. C. Objections

Brief argues from testimony presented to meet objections in report recommending denial of certificate for proposed short line

COUNSEL for the New York, Pittsburgh & Chicago, on March 3, filed with the Interstate Commerce Commission their brief in connection with the application of that company to construct a new short, low-grade railway line across Pennsylvania between Allegheny City and Easton. The brief, with its supplementary Abstract of Evidence, summarizes testimony and argues for the application on the basis of evidence presented at hearings which were held in Washington December 17-18, 1929, and January 28-29, 1930.

The proposed New York, Pittsburgh & Chicago is held to be the first American railway conceived for the purpose of serving a highly-developed industrial territory and comprehensively planned to meet the present and future requirements of such a section. The brief sets forth in this connection that "Applicant offers to provide a railroad of unequalled operating efficiency and economy in the region in which the public demand for transportation is at its unparalleled maximum. Nowhere in the world does there exist a railroad comparable in high efficiency with that which the applicant asks authority to create, and nowhere else in the world is there any area so wholly dependent upon efficient land transportation or characterized by such an enormous aggregate of freight movement. Applicant proposes a super-railroad, to be built and equipped according to the present and highest state of the art of railroad construction and with locomotives and other equipment of the most modern type. It is to be located where traffic is most dense and the necessity for efficient transportation of commodities, across the rugged terrain of the Appalachians, most imperative; where the need for additional railroad facilities is recognized and imminent."

The application is opposed by the Reading, the Pennsylvania, the Delaware, Lackawanna & Western, the New York Central, the Lehigh Valley, and the Baltimore & Ohio. Testimony of protestants was reported in the *Railway Age* of February 1, page 346.

History of Project

The argument of the brief is prefaced with an historical summary of the New York, Pittsburgh & Chicago while the abstract of evidence outlines historical testimony presented at the hearings by L. F. Loree, president of the Delaware & Hudson. In such testimony it is revealed that the proposed line was conceived early in the present century by Joseph Ramsey, then locating engineer of the Pennsylvania and later president of the Wabash and of the Wheeling & Lake Erie. Existing charters of projected Pennsylvania railways were acquired and consolidated, and the first surveys were made in 1903-04 between Etna and Allentown. Subsequently the late E. H. Harriman became interested in the project and acquired the property, now owned by the Harriman estate, for which latter Mr. Loree is acting in the case.

Following the initial and a few subsequent surveys, the work on the line was interrupted by the World War. In 1919, however, the charter was renewed and, as the brief points out, "On March 30, 1925, New York, Pittsburgh & Chicago Railroad applied, under Section 1 (18-21) of the Interstate Commerce Act, for a certificate authorizing the construction of a railroad from Allegheny City to Easton, 283 miles, with two branch lines, the Brush Creek and Crow's Run branch, from the main line at Allegheny City to North Sewickley, 31 miles, and the Pittsburgh branch, from the main line at Pittsburgh Junction into the industrial district of Pittsburgh, 30 miles; a total of 344 miles of railroad, entirely within Pennsylvania."

Hearings were held at Washington, June 22-23, 1925, before Charles D. Mahaffie, director of the Interstate Commerce Commission's Bureau of Finance and Examiner C. E. Boles. A proposed report, prepared by C. V. Burnside, assistant director, Bureau of Finance, and Engineer-Examiner Edward Gray, was issued on October 5, 1925. It recommended that "The application should be denied, but without prejudice to resubmission with additional support and upon a record that will give broader consideration to the public interest." Following the filing of briefs and exceptions to this proposed report, and the hearing of oral arguments the commission, on February 8, 1926, entered an order reopening the proceeding for further hearing. This further hearing was held at Washington, December 17-18, 1929, and continued at the same point January 28-29, 1930.

Branch Lines

At the beginning of the further hearing the application was amended to eliminate the branch lines. Later this motion was withdrawn but no new testimony on the branch lines was presented, the brief saying "Applicant concedes that, if the public interest necessary to require the issue of the certificate of public convenience and necessity provided for by Section 1 (18-20) is not established on the original record with regard to these branch lines, it has not been established at all and that, as to these proposed branches, the application should be dismissed."

The present brief of counsel for the New York, Pittsburgh & Chicago holds among other things that in evidence presented by the applicant at these December and January sessions "Every point made by the Examiner in recommending refusal of the certificate, without prejudice; upon the record made before the reopening, is fully and satisfactorily covered as to the main line, by the present record."

With the foregoing contention, that the examiner's objections to the original record are answered, included as one point the brief defends the application on six other bases. The first of these latter is that the proposed line is a "railroad of highly superior type and unequalled operating efficiency and economy."

Savings in Distance

The saving in distance is first stressed. Projecting a through route from New York to Chicago via the New York, Pittsburgh & Chicago, the brief suggests first the use of the line of the Central of New Jersey, east of Easton and the Pennsylvania from Allegheny City to Chicago. This would produce a 824-mile New York-Chicago route as against 899 miles via the Pennsylvania, the shortest route now existing. Substituting the Baltimore & Ohio from Etna to Chicago, for the Pennsylvania, results in an 828-mile route. The distances between New York and Chicago over routes other than the Pennsylvania route mentioned above, are given in an exhibit as follows: New York Central (main line), 978.7 miles; New York Central (Clearfield route), 923.4 miles; Baltimore & Ohio (main line), 993.2 miles; Baltimore & Ohio (Butler-DuBois route), 900.2 miles; Pennsylvania (Fort Wayne route), 908.2 miles; Erie, 998.5 miles; Erie-Nickel Plate, 947.9 miles.

Distance savings by percentages are also tabulated. This tabulation reveals that by the use of the proposed New York, Pittsburgh & Chicago, instead of the shortest present route, the distance from New York to other points would be cut down as follows: Chicago, 8.3 per cent; Columbus, Ohio, 11.9 per cent; Cleveland, Ohio, 5.6 per cent; Youngstown, Ohio, 13.2 per cent; Pittsburgh, Pa., 17.2 per cent.

Physical Characteristics

The low-grades and minimum curvature have been the most-discussed features of the line. No eastbound grade over 0.3 per cent is proposed while the ruling grade westbound would be 0.4 per cent. It is thus contended that an operating ratio of 40.47 per cent could be realized. Maximum grades of other lines in trunk link territory, eastbound and westbound respectively, are given as follows: New York Central (main line), 0.4 and 0.6 per cent, New York Central (Clearfield route), 1.0 and 1.2 per cent; Baltimore & Ohio (main line) 1.3 and 1.8 per cent; Baltimore & Ohio (Butler-DuBois route), 1.0 and 1.2 per cent; Pennsylvania, 1.2 and 1.7 per cent; Erie, 1.4 and 1.1 per cent.

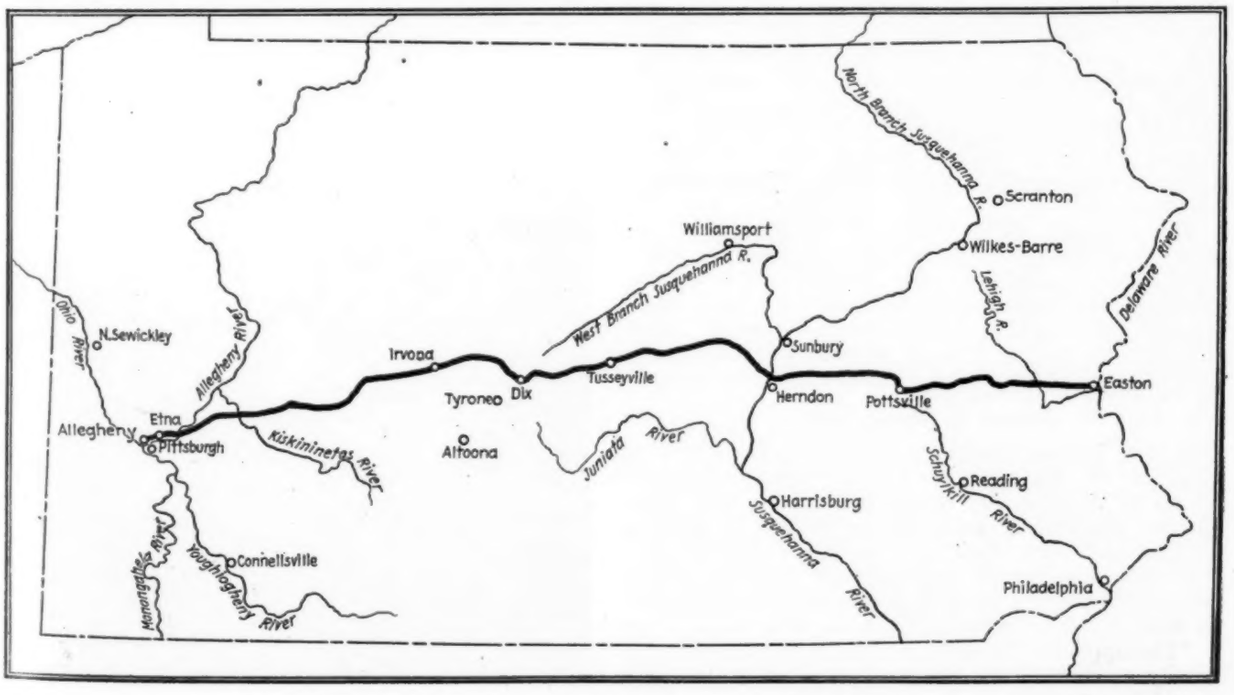
Furthermore, the brief continues "There is to be no curve sharper than four degrees and the average number of degrees of curvature per mile is to be twenty degrees. The entire line will be laid with rails weighing 127 pounds to the yard, except sidings, which will have ninety-pound rails, and will be double-tracked. Public highway crossings at grade will be avoided, provision having been made for 107 separated-grade highway crossings, an average of one to every 2.6 miles for the full length of the line.

"In short, applicant's railroad will be the only considerable railroad of thoroughly modern type anywhere in the world. It will be the only considerable railroad ever built in a region of dense general traffic and, from the beginning, planned and constructed to handle a very large volume of traffic with the greatest possible economy in expenditures in operation, that is to say, to obtain the maximum possible results from the labor, fuel and materials and supplies utilized in operation.

Cost, Traffic and Revenue Estimates

Summaries of testimony as to the estimated cost of the project reveal that a total outlay of $177,740,373 or $628,058 per mile is contemplated, of which $138,627,853 or $489,851 per mile is the estimated cost of road. The argument's justification of this outlay is a discussion of testimony offered to show that "The prospective growth of freight traffic in the region that would be served by applicant's railroad requires additional facilities which should be of the superior type proposed by the applicant."

Ton-mile statistics for the Eastern district are pre-



Main Line of the Proposed New York, Pittsburgh & Chicago

sented to establish the reasonableness of the contention that the ton-miles in this district will in the future show an average annual growth of two per cent. From testimony along traffic lines estimates of the probable volume of traffic which would be enjoyed by the New York, Pittsburgh & Chicago are also gleaned. These estimates are that in 1936, the first year in which operation is contemplated, the proposed line would receive 9,338,329 net tons of eastbound and 2,210,381 net tons of westbound freight, a total of 11,548,810; by 1939 the eastbound figure is expected to be 11,109,343 and westbound 2,629,698 or a total of 13,739,041 net tons.

"The total of 11,548,810 net tons" the testimony continues "is slightly less than 85 per cent of the estimated increase of that year in traffic to the New York City, Philadelphia and New England districts. Its movement by the new route would not, therefore reduce the volume of traffic now moving over existing routes."

Estimated 1939 gross revenues are $29,668,239.12, of which $29,516,399.12 is the estimated gross yield from freight and $151,840 from passenger service. Estimated 1939 expenses total $12,006,443 to produce the operating ratio of 40.47. After deductions, including taxes and a debit of $947,403 for car hire, the estimated 1939 net railway operating income is placed at $14,975,993.09. Since a "fair return" (5.75 per cent) on the estimated capital investment of $177,740,373 would be but $10,220,071, the brief contends that "The additional capital which would be added to the rate base of the eastern region, by construction of applicants railroad, being invested in a railroad of such superior type and unequalled operating efficiency would not increase, but on the contrary would reduce, the aggregate freight receipts necessary to afford the 'fair return' provided for by law."

Effect on Consolidation Plan

An exhibit is included to show the value of the proposed line in the preservation of trunk line competition under the pending consolidation plan. This exhibit is in the form of a series of maps which superimpose the New York, Pittsburgh & Chicago on each of the five systems proposed for trunk line territory. "Should railroad consolidation be effected, in accordance with, or substantially in accordance with, the commission's plan," the brief argues from this exhibit, "applicant's railroad will be greatly needed in order to create that balance among the several systems which is essential to the relative equality in competition contemplated by Section 5 (4)."

The argument closes with this answer to the opposition testimony: "Existing railroads have no vested right to exemption from the competition of a new transportation facility of highly superior type and unequalled efficiency." The opinion of chief justice Taney in the case of Charles River Bridge vs. Warren Budge is quoted in substantiation of this contention.

Brief in Opposition

A brief in opposition to the application was filed on behalf of the Baltimore & Ohio, the Delaware, Lackawanna & Western, the Lehigh Valley, the New York Central, the Pennsylvania and the Reading, taking the position that "the applicant's project is not required for public convenience and necessity, and also that it would constitute a positive disadvantage to the public interest." The points made in the brief are:

"The applicant concedes that there is no public necessity or convenience along its proposed route which would be promoted by its proposed line.

"The transportation service currently rendered traffic which the applicant would propose to handle indicates a total lack of necessity for the proposed railroad.

"There is no evidence that traffic such as the applicant would propose to handle is increasing or is likely to increase to such an extent as to justify or require the construction of the proposed line.

"The existing railroads are abundantly able to handle any increase of traffic that might possibly develop.

"The applicant would not secure traffic sufficient to justify its operation.

"The applicant's assumption that its railroad, if constructed, would effect a reduction in time of transportation is unfounded.

"There is no war necessity for the road.

"The railroad proposed by the applicant would not only not promote the convenience and necessity of the public, but would constitute a positive disadvantage because of the interchange of traffic which would be necessitated in the vicinity of Pittsburgh if through routes were established with the applicant by its connections.

"The proposed railroad of the applicant, if built, would constitute a positive disadvantage in that it would tend to reduce the returns currently earned by the carriers in the eastern district.

"The construction of the railroad proposed by the applicant is not only not justified by the provisions of the interstate commerce act regarding consolidation, but is inconsistent therewith."

In conclusion the brief states: "The applicant invokes, as it must, the public interest in support of its project; but the applicable provisions of the interstate commerce act clearly indicate that there is no presumption that the public interest will be promoted by the construction of additional lines of railroad. On the contrary, it specifically prohibits the construction of such roads, unless the commission upon proper proof, is able to conclude that the present or future public necessity and convenience require such action. Obviously, this legislation discloses the belief of Congress that the public interest may be better subserved by the conservation and full utilization of existing facilities than by the unrestrained creation of new ones."

* * *

View from the Hump of the Texas & Pacific Yard at Fort Worth, Tex.

Reading Does Well in 1929

Net income better than in 1928—Heavy improvement program continued—Highway subsidiary prospers

THE Reading in 1929 had gross revenues of $97,196,954, an increase of $742,065 over the preceding year. This increase was attributable to an increase of $2,553,657 in revenues from merchandise traffic, to a substantial increase in switching revenues and to back mail pay; revenues from coal traffic declined $1,609,227 and passenger revenues were lower by $960,547. Operating expenses increased $1,730,360 to a total of $75,929,795, so that net from railway operations declined slightly less than one million dollars to $21,267,159. Tax accruals declined substantially, however, so that net railway operating income, $17,196,521, was but $540,404 less than in the preceding year.

Of the increase in operating expenses, $1,199,506 was attributable to maintenance of equipment expense, an increase which is easily accounted for by a decline of 13 per cent in unserviceable locomotives (eleven months figures). The increase in maintenance of way expenses was $533,256, a modest increase in view of the company's extensive program of additions and betterments. Transportation expenses, generally regarded as the most reliable index of operating efficiency, declined $180,891 in spite of an increase in the volume of traffic.

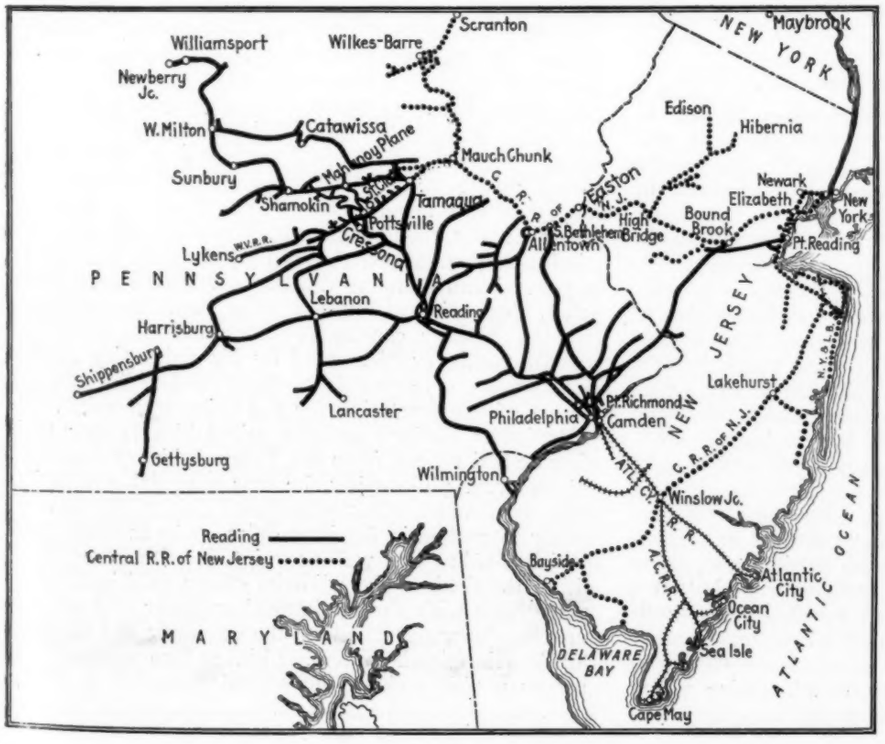
Operating Efficiency Improved

Cumulative totals of comparative freight service operating statistics are at this writing available for only the first eleven months of the year and are shown in the accompanying table. Improved performance is shown in almost every detail. Train-hours decreased in the face of an increase in tonnage. The average train load rose. Train speed and both gross and net ton-miles per train-hour improved. Fuel consumption per 1000 gross ton-miles declined 4.6 per cent and the ratio of unserviceable locomotives to total was reduced, as heretofore noted, by more than 13 per cent.

A considerable increase in the mileage of line operated by the company is shown in the table. This was due to operating contracts which were placed in effect with a number of subsidiary companies in 1929 which prior thereto had been operated independently.

Reading Company—Comparison of Selected Freight Operating Statistics—Eleven Months

	Eleven Months 1929	Eleven Months 1928	Per cent of change Inc.	Per cent of change Dec.
Mileage operated	1,452	1,130	28.5	
Gross ton-miles (thousands)	13,321,584	13,167,429	1.2	
Net ton-miles (thousands)	6,536,786	6,523,602	0.2	
Freight train-miles (thousands)	7,057	6,996	0.9	
Freight locomotive-miles (thousands)	8,238	8,298		0.7
Freight car-miles (thousands)	318,999	314,347	1.5	
Freight train-hours	618,959	636,769		2.8
Car-miles per day	22.6	21.8	3.7	
Net tons per loaded car	33.6	34.5		2.6
Per cent loaded to total car miles	61.1	60.2	1.5	
Net ton-miles per car day	463	453	2.2	
Freight cars per train	46.1	45.9	0.4	
Gross tons per train	1,888	1,882	0.3	
Net tons per train	926	933		0.8
Train speed, miles per train hr.	11.4	11.0	3.6	
Gross ton-miles per train-hour	21,523	20,679	4.1	
Net ton-miles per train-hour	10,561	10,245	3.1	
Lb. coal per 1,000 gross ton-miles	145	152		4.6
Loco. miles per loco. day	61.8	60.7	0.7	
Per cent freight locos. unserviceable	16.1	18.6		13.4
Per cent freight cars unserviceable	4.6	4.4	4.5	



Non-operating income in 1929 increased more than $400,000 and deductions from gross income declined, so that net income for the year—$15,508,740—was slightly greater than in the preceding year. There was a large increase, however, in appropriations of net income—$8,950,538 from this source being invested in physical property, an increase of $5,738,394 when compared with the preceding year, so that the income balance transferred to profit and loss was but $6,558,202, as compared with $12,273,676 in the preceding year. Dividend appropriations (4 per cent on preferred and 8 per cent on common) of surplus totaled $8,397,602 which, it will be noted, was but 54 per cent of net income. It is further noteworthy how strong the financial position of the company is by reason of its low fixed charges. In

1929 rent for leased roads totaled $3,337,245, interest on funded debt $4,690,887, and total fixed charges $8,641,123, which being compared with gross income of $24,149,864, shows that fixed charges were earned almost 2.8 times.

Long Term Debt Less Than Half of Stock and Surplus

Long term debt of the company at the end of 1929 totaled $116,564,911, as compared with outstanding stock of a par value of $139,950,950, the stock interest in the property being further augmented by a corporate surplus of $114,102,767.

The Reading is, of course, a high-grade terminal railroad, with many branch lines and high traffic density. It is also one of the principal anthracite carriers. In 1929, 2.54 per cent of its tonnage was of agricultural products, 1.15 per cent of animal products, 61.75 per cent mine products (30.74 per cent bituminous and 20.75 per cent anthracite coal), 3.06 per cent forest products, 28.53 per cent manufactures and miscellaneous, and 2.93 per cent l.c.l. It is thus to be seen that the road, while it is an important anthracite carrier, nevertheless transports more bituminous than anthracite. Moreover, while its coal tonnage is great (33,531,463 tons in 1929), the ratio of the tonnage of manufactures is also marked, indicative of the industrial area served by the company.

The Reading is pursuing a comprehensive policy of capital improvements for the purpose of aiding the development of its territory and improving its transportation facilities. In 1929 its net increase in property investment by reason of this policy totaled $9,386,601. The most important single phase of this program at the present time is the electrification of the Philadelphia surburban lines. Extensive grade crossing elimination projects in this same zone are also in progress. Construction was begun in 1929 on a 12-story terminal warehouse in Philadelphia. Numerous bridge renewal projects were completed. A new $2,000,000 passenger station was completed at Philadelphia and another new station has recently been placed in service at Reading, Pa.

Highway Subsidiary Profitable

The company was one of the pioneers in the establishment of highway motor service through the medium of its subsidiary, the Reading Transportation Company, the staff of which was drawn entirely from the railroad. This subsidiary has, since its inception, steadily extended its operations. In 1929 an additional 363.8 miles of route were added to its services, including lines from New York to Harrisburg, Pa., Philadelphia to Atlantic City and Philadelphia to Pottsville. The highway line at the end of 1929 owned 52 motor coaches and during the year handled 880,375 passengers. The company showed a net profit from its operations during the year, over and above the considerable savings effected by the parent company as a result of the elimination of unprofitable train service.

The railroad has, in common with most railways experienced in recent years a heavy decline in passenger revenues. This decline has, in its case, been aggravated not only by automobile competition but also, in the Philadelphia suburban area, by the extension of rapid transit lines. The company has been experimenting with a new basis of fares for its suburban zone and this, combined with the improved service which electrification will make possible, should go a long way toward correcting the condition.

Doctor Hadley Dead in Japan

DOCTOR Arthur Twining Hadley, former president of Yale University and associate editor of this paper, then the *Railroad Gazette*, in 1887-1889 died suddenly of pneumonia in Kobe, Japan, on March 6. With his wife Doctor Hadley was on a tour around the world. He had been reported in good health only a short time before his death.

Arthur Twining Hadley was born in New Haven, Conn., on April 23, 1856. He was the son of Professor James Hadley and a brilliant student from his childhood. On graduation from Yale in 1876 he studied for two years at the University of Berlin, was tutor at Yale, 1879, lecturer on railroad transportation from 1883 to 1886 and professor of political science, 1886. He was professor of political economy at Yale from 1891 until his election to the presidency in 1899.

Doctor Hadley's writing and lectures in the field of economics make a long list, this work having been his chief occupation during the whole of his early life; but the foundation of his reputation in the transportation world was his book on "Railway Transportation; Its History and Laws," first published in 1885. This was a fundamental study and the book became a classic.

In 1911 Doctor Hadley was chairman of the commission appointed by President Taft to investigate the financial condition of the railroads. He was a director of the New York, New Haven & Hartford and the Atchison, Topeka & Santa Fe.

Doctor Hadley was associate editor of the *Railroad Gazette* for only about two years, but he had been a regular contributor for several years before that and continued to write for the paper long afterward. He and Silas Wright Dunning, chief editor from 1871 to 1886, were kindred spirits though 18 years separated them in age. Both were thorough students with a worldwide outlook and they were pioneers in railroad economics. They educated the American railroad world. Hadley's book was the first comprehensive formulation of the thought in its field.

Hadley is the last of the quartet—Fink, Dunning, Adams, and Hadley, whose work, combined, first charted American railroad economics. Albert Fink, who began writing when he was general superintendent of the Louisville & Nashville and who later became commissioner of the Trunk Line Association at New York, spread the facts of railroad operations broadcast in a way that had never before been done. Adams, of Massachusetts, the first philosophical state railroad commissioner, popularized railroad wisdom for the public in general and Dunning did the same, with meticulous detail, for railroad officers who read the *Railroad Gazette*. Hadley, coming into the circle with the freshness of youth, supplemented by his university studies in Germany, crystallized the facts and philosophy of the art of transportation for the rising generation.

Professor Hadley—nobody called him Doctor until after he had retired from the Yale presidency—was not only a great philosopher, he was a genial companion and a gentleman. On the *Railroad Gazette* he was not merely interested in foreign affairs, as he modestly told his friends, but was well acquainted with everything within the field of the editorial office; as friendly and sympathetic with the mechanical engineer and the advertising department as with the economic and financial world. His friends remember him as two personalities, almost; a philosopher who soared above all ordinary levels and at the same time a warm friend with the most engaging of personal traits.

New Recapture Report Issued

Brimstone Railroad & Canal Company selected as first victim in campaign for recapture of excess earnings

By H. F. Lane
Washington Editor

WASHINGTON, D. C.

THE Interstate Commerce Commission has selected another nine-mile railroad for national notoriety as the first victim of its efforts to comply with the decision of the Supreme Court of last May in the St. Louis & O'Fallon case, in which the court held that it had failed to obey the law by omitting to give proper consideration to cost of reproduction at current prices in its valuation of that property. As the first example of a new vigorous campaign for the recapture of railroad excess earnings for the period since 1920, which the commission has undertaken in compliance with section 15a of the law without having first obtained a court review of its primary pre-war valuations under section 19a, the commission on March 4 issued a tentative recapture report in the case of the Brimstone Railroad & Canal Company.

This company is controlled by the Union Sulphur Company and built its line primarily to serve the sulphur mine of that company near Brimstone, La. The owned and operated mileage is about the same as that of the O'Fallon, 9.232 miles, although it also operated over 2.86 miles of the Kansas City Southern, but unlike the O'Fallon, which was an unusually prosperous road, the Brimstone has pending before the commission an application filed in 1928 for authority to abandon its line, due to the exhaustion of the sulphur deposits.

This fact, and the operating losses in 1926, 1927 and 1928, are said in the report to have moved the commission to advance this proceeding for immediate disposition, and the report does not include the lengthy argument as to the application of the commission's ideas of valuation to the railroad situation generally which caused the O'Fallon case to become known as the "twenty-fifty billion dollar lawsuit." However, the case has naturally attracted attention as the first valuation for recapture purposes since the O'Fallon decision and the first since that case in which the commission has had an opportunity to deal with cost of reproduction during the recapture period.

That it has given consideration to this element of value is indicated first by the fact that the report sets up an estimate of cost of reproduction, new and less depreciation based on current prices for each of the recapture years, which the commission did not even attempt to do in the O'Fallon case, although it contended that it had given the matter "consideration." Moreover, the final values found for the six years, 1920 to 1925, inclusive, exceed the cost of reproduction less depreciation plus land and working capital, for three of the six years, 1921, 1922 and 1925, although they are somewhat less than the reproduction figure for the three other years, 1920, 1923 and 1924. Advocates of the prudent investment theory of valuation, however, are also entitled to draw comfort from the report because for all six years the values found are less than the original cost of the property, as determined largely from the book investment accounts, and for four of the years they are less than the original cost reduced proportionately to depreciation.

The report, by Division 1, Commissioners Meyer, Aitchison, Lewis and Farrell, finds that the earnings of the Brimstone were in excess of a return of 6 per cent upon the value of the property devoted to transportation service in each of the years 1920 to 1925, but that there was no excess income for the years 1926 to 1928, for which the carrier reported losses. The total amount of the access was placed at $520,871, of which one-half, or $260,435, is payable to the commission for use of the general railroad contingent fund. The Brimstone had already voluntarily paid $42,642 and the order in the present report directs the payment of the balance of $217,793. Thirty days is allowed within which to file a protest against this tentative determination of the commission and, if one is filed, the order directing payment will be stayed pending a final determination.

The commission's valuation of the property under section 19a, as of June 30, 1918, was $187,072, the estimates of cost of reproduction covered by the report having been based on the 1914 level of prices. The Brimstone had rendered reports for the recapture period and on its own figures had voluntarily paid $42,642, but the commission found itself unable to agree either with its estimate of the value of its property or the correctness of its computation of the net railway operating income received by it saying:

"The Brimstone has based all its estimates of the value of the railroad property upon cost of reproduction new without diminution for depreciation. In the early years it has trended prices from the 1914 level to the current periods by the use of excessive factors. It has included the value of property which we have held in *Brimstone R. R. & C. Co.*, 141 I. C. C. 445, to have been not used for common-carrier purposes and not includible in the rate base. It has included as working capital, both the value of materials and supplies on hand at the close of each recapture period without modification, and a substantial amount of cash. It has determined the vaue as of the close of each recapture period, except one, which will generally be found to be the maximum value of its property in use during any part of the period. The net railway operating income as computed by the Brimstone and reported for each year includes many sums which were recorded in violation of our accounting regulations published to insure uniformity of accounting, and includes large sums which as more fully discussed hereinafter we do not deem to be proper or reasonable."

The company had filed reports stating its value as $811,585 in 1920, increasing to $855,971 in 1922 and decreasing to $256,655 in 1928. This report states the cost of reproduction new as $569,910 on February 29, 1920, and $636,142 on December 31, 1920, and decreasing to $304,343 on December 31, 1927. The original cost, estimated in part by the Bureau of Accounts, is stated as ranging from $326,180 as of February 29, 1920, and $451,575 as of December 31, 1920, down to $276,232 at the end of 1927, and the original cost reduced in proportion to depreciation as ranging from $377,742 as of December 31, 1920, to $175,186 on De-

cember 31, 1927. The cost of reproduction new and less depreciation and the final values are as follows:

	Cost of Repr. New	Less Depr.	Final Value
Feb. 29, 1920	$569,910	$422,196	.....
Dec. 31, 1920	636,142	532,126	$338,000
1921	482,595	375,663	398,500
1922	451,181	344,805	370,600
1923	524,553	407,708	385,250
1924	511,652	373,736	377,900
1925	457,325	321,435	356,000
1926	480,402	314,523	.....
1927	304,343	193,024	.....

The cost of reproduction figures are exclusive of carrier land, as to which the report says there has been no change since 1918 and which is valued at $3,982, and working capital, for which the report gives estimates of the material and supplies needed, ranging from $3,500 in 1922 to $11,700 for 1925.

The final values for rate-making and recapture purposes are stated to have been arrived at "upon consideration of the foregoing facts and of the matters set forth in our former valuation decision, including appreciation, depreciation, going-concern value, and all other matters bearing upon the value of the property." No statement is made as to the weight accorded the reproduction factor or any other and a press notice regarding the report makes no mention of it.

Much of the volume of the report is devoted to criticisms of and readjustments of the earnings and expenses reported. The report says that "clearly, the operation of the recapture law can not be defeated by incorrect statements of actual revenues and expenses," and that certain items point clearly to the fact that they were incurred mainly on behalf of the proprietary company, but a substantial part of the expense was charged to the Brimstone.

The commission's program of tentative recapture reports for the fiscal year 1931 lists 161 roads on which it expects to issue recapture reports. It has also issued orders to some 400 roads to file reports on B. V. Form 588 bringing their valuation data up to December 31, 1929. It had previously required reports up to December 31, 1927.

"Reciprocity" Hearings Shift to Detroit and Cleveland

(Continued from page 598)

counsel for the respondents if it was a common practice for patrons of the road to solicit business, he said, yes, and named several companies which had done so.

F. P. Barr, general traffic manager, said he investigated the possibility of getting increased traffic from Swift & Company at the time of the draft gear negotiations but that phosphate rock traffic was denied the Wheeling & Lake Erie because of Swift & Company's preference to move it to Cleveland over a line that served their plant directly.

W. W. Griswold, purchasing agent, said he ordered the draft gear upon the instructions of the vice-president. The instructions were verbal and the gear were ordered on the same day by telegram, followed later with a formal order. H. A. Macbeth, superintendent of motive power testified that he had inspected the drawings of the Durable gear but had made no further examination before the gear were purchased. When asked if any results of laboratory tests or similar data were submitted to him by the Mechanical Manufacturing Company at the time of purchasing the gear, he said, no; he also testified that no guarantee had been received.

The hearing adjourned to convene in Washington about March 17.

Looking Backward

Fifty Years Ago

On February 8 the first through passenger train on the Cincinnati Southern ran from Cincinnati, Ohio, to Chattanooga, Tenn., 338 miles, the schedule time being 12 hours and 15 minutes.—*Railway Age,* March 11, 1880.

Very few roads in the West can show greater returns per mile in the operation of their properties than the Chicago & Alton. The report for 1879 shows that its gross earnings on 846 miles of line in that year increased 23.31 per cent over 1878, while net earnings increased 20.75 per cent. The net earnings per mile amounted to $3,181 in 1878 and to $3,439 in 1879. The average rate per ton mile for transporting freight was 1.054 cents in 1879.—*Railway Age,* March 11, 1880.

The railroad commission of Georgia has instituted a rigid system of regulation of railroads within that state. It adopted rules last week which require the reduction of freight tariffs and the prohibition of discrimination of any character, under a state law directing it to prepare a schedule of reasonable maximum rates. Passenger fares have been placed at four cents per mile with ticket, and four and a half cents without. For berths in sleeping cars one dollar may be charged for distances of 100 miles or less, and not more than one cent per mile for distances over 100 miles.—*Chicago Railway Review,* March 6, 1880.

Twenty-Five Years Ago

L. C. Fritch, who has been engaged in special work for the assistant general manager of the Illinois Central, has been appointed assistant to the general manager of that road at Chicago.—*Railway Age,* March 10, 1905.

Railroad commission bills have been passed already this winter by the legislatures of Indiana, Kansas, Montana and Washington while similar bills are pending in Wisconsin, Idaho, Nebraska and Oklahoma Territory.—*Railway Age,* March 10, 1905.

The volume of passenger traffic to the city of Washington for the presidential inauguration last week was heavier than ever before. The Pennsylvania delivered 1,229 cars of passengers into Washington between midnight on Thursday and Saturday noon, an increase of 85 per cent over the number handled at McKinley's inauguration four years ago. The Baltimore & Ohio showed an increase of 60 per cent in cars handled and 35 per cent in the number of trains.—*Railroad Gazette,* March 10, 1905.

Ten Years Ago

President Wilson on February 28 signed the Esch-Cummins bill, which by its terms became effective on March 1. The transfer of the railroads from the management of the Railroad Administration at 12:01 a. m. on March 1, was accomplished without particular incident.—*Railway Age,* March 5, 1920.

Last week in London the stockholders of the Grand Trunk voted to accept the offer of the Canadian government by which the Grand Trunk is to be taken over and operated as part of the Canadian National Railways. The acquisition of the Grand Trunk adds 3,579 miles to this system, giving it an aggregate mileage of about 22,000.—*Railway Age,* March 5, 1920.

Elliott E. Nash, assistant to the federal manager of the Chicago & North Western, has been appointed general manager of the Minneapolis & St. Louis at Minneapolis, Minn. Walter J. Towne, assistant general manager of the Chicago & North Western, has been appointed engineer of maintenance of way of that railroad. J. C. Patterson, principal assistant engineer of the Erie, has been promoted to regional engineer at Jersey City, N. J. George W. Hand, corporate chief engineer of the North Western and the Chicago, St. Paul, Minneapolis & Omaha, has been promoted to assistant to the president of the former road.—*Railway Age,* March 5, 1920.

Communications and Books

Railroads and Jobbers

CHICAGO.

TO THE EDITOR:

I read with interest the editorial in the issue of January 18, entitled "Jobbers and Purchasing." Having been a purchasing agent for some 18 years, I can appreciate the point of view of some of the purchasing agents, but there is another way of looking at jobbing which a purchasing agent should also consider. At the present time, the railroads as well as steamship lines are "protecting" brokers, jobbers, etc., with commissions. They seem to encourage tourist agencies, booking agencies and travel bureaus. I have travelled some and seem to be on the mailing list of agencies of this type. They do not maintain offices for fun. The literature they send out costs money. Agencies of this kind simply illustrate the ramifications of business. They are part of it. Eliminate all these "middle" people and where would we be? There does not seem to be any business today but has such a following.

A. V. KONSBERG.

Clearing House for Railroad Accounts

NASHVILLE, TENN.

TO THE EDITOR:

Each month over 300,000 railroad drafts travel about the country in settlement of interline accounts. Each draft must be typed, numbered, signed and handled by the accounting and treasury departments of the railroads and by several banks. Most of the trouble and expense in handling these drafts, I think, could be eliminated by the establishment at some central point of a railroad clearing house. Once a month each road would present to the clearing house a statement of all freight, ticket, mileage, claims, and all other items subject to draft from foreign lines. On the first of the month the clearing house would send each road a check for the net balance due, or draw a draft if the net balance was not in their favor.

This plan, I think, would save the Class I railroads in clerk hire and stationery $1,000,000 each year. If a railroad went into receivership or failed to meet its obligations the accounts could of course be charged back to the other lines.

There could also be a large saving in bad accounts. The clearing house with an efficient organization could keep a close check on all roads. If it found that a road could not meet its obligations or was headed for receivership, it could take steps to protect the other roads from a serious loss. After such a bureau was established there would possibly be other duties that it could take over which would result in a saving to the carriers.

T. J. WELSH.

Veterans of Twenty-First Engineers Organize

HINTON, W. VA.

TO THE EDITOR:

The Twenty-First Engineers, Light Railway, First Army, A.E.F., met in an annual reunion at the Pendennis Club during the American Legion convention at Louisville, Ky., October 1, 1929, and elected the following officers: Lt. Col. E. D. Peck, honorary president, Corps of Engineers, United States Army; Maj. Charles T. Butler, president, care of the Chesapeake & Ohio, Hinton, W. Va.; Sergt. Frederick G. Webster, secretary and treasurer, New York Central Lines, whose mail address is care of Hiram J. Slifer Post, American Legion, 6819 W. Prairie avenue, Chicago.

The Twenty-First Engineers was composed of railroad men from the United States and foreign countries and was organized for service in the advanced sector of the Service of Supplies of the First Army. It was continuously on the front longer than any other unit of the American Army. The regiment will meet in Boston, Mass., with the American Legion the second week in October, 1930.

All former members are requested to write the secretary at once in order to complete claims of their disabled comrades, to preserve associations incident to their service in France, and to deliver medals to members authorized by the French Government for participation in line of duty during the World War.

CHAS. T. BUTLER.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Commodity Values and Freight Rates, by M. O. Lorenz. "The consideration of commodity values in rate-making is much broader than the question of covering the risk to the railway on account of liability for loss and damage." p. 3. "Freight rates are today on a predominantly cost of service basis, but the minor value factor is woven through the whole fabric, and to eliminate it would bring many radical changes in rates. The result of the preceding analysis is to show that the proper method of approach in 'considering' cost and value of service is to compute rates on a statistical basis with a separate sphere for cost and value, rather than to seek some relation between total rate and value on some regressive percentage basis." p. 10. 10 p. Pub. by Bureau of Statistics, Interstate Commerce Commission, Washington, D. C. *Apply.*

Form of Accounts and Statistical Returns Annotated to Show the Manner In Which They Are To Be Compiled Under the Provisions of Section 77 (1) of the Railways Act, 1921. Part I—Financial Accounts, Part II—Statistical Returns. "Approved by and on behalf of the Minister of Transport." Indexed. 95 p. Pub. by H. M. Stationery Office, London, England. 4 shillings

A Review of Railway Operations in 1929, by Julius H. Parmelee. "Reprinted by permission from *Railway Age* for January 4, 1930, and figures revised to February 24, 1930." Issued as Miscellaneous series Bulletin 51. 40 p. Pub. by Bureau of Railway Economics, Washington, D. C. *Apply.*

Periodical Articles

Dodging Death to Trade in the West, by Thomas McPherrin Day, as told to Edward Carroll Day. "I set out late in October, 1840. The cheapest route from Philadelphia to Indian Territory in those days was by water, going by sailing vessel to Cape Hatteras, past Bahama Banks, to Key West and across the Gulf to New Orleans; then by steamer up the Mississippi." Then his route was up the Arkansas River to Fort Gibson where he got a horse, for further travel. "I decided to make my homeward journey by land and rode part way on the Pennsylvania Railroad." Map and illustrations. Nation's Business, March 1930, p. 32-35, 148.

The Financial Situation. Editorial comment on effect on railroads of response to President's stabilization program. Commercial and Financial Chronicle, March 1, 1930, p. 1327-1328.

Passenger Transportation—Its Past, Its Present and Its Future, by P. A. Harverson. Under the scheme of co-ordination which I visualize, the wayside country station will become a goods yard where full wagon loads of merchandise and agricultural produce will be handled, but the passengers who formerly used this wayside station and the small packages and parcels will travel by road to the nearest town, there to be linked up with the railway. . . A co-ordinated road and rail service already established will be extended to include the air services. Air, rail, and road will come to a focus in the place in each city which is now called the railway station." p. 189, 190. Journal of the Institute of Transport, February, 1930, p. 185-190.

Odds and Ends of Railroading

Most Collegiate Railway

The Washington, Idaho & Montana may lay claim to being the most collegiate railway. Eight of its 15 stations are named after famous educational institutions, as follows: Wellesley, Princeton, Harvard, Yale, Stanford, Vassar, Cornell and Purdue. The construction engineers on that line must have been extremely loyal to their own and their wives' alma maters.

Champion Shooter

Mrs. Paul E. Kyle, wife of a helper, employed on the Cumberland Valley division of the Pennsylvania, and daughter of another employee, has created a world's record for women in basketball scoring. In 11 games, she scored 520 points, an average of more than 47 points per game. Her highest score in one game was 37 baskets, for 74 points. She averaged 1.7 points for every minute she played.

Whistle Pulling Takes Elbow Grease

It takes a lot of "elbow grease" to blow the whistle on a locomotive on one trip between McComb, Miss., and New Orleans, La., 105 miles, according to J. H. Morgan of McComb, engineman of the Illinois Central. "To make the whistle blast effective, the engineer must produce a 10-lb. pull on the cord, and in the 376 times that the whistle should be blown on my run one way, there is a total of 3,760 lb. of cord pulling," he writes. Mr. Morgan has been running a locomotive since 1900, and in that time his iron horse has never injured anyone.

Crossing Rivers

BOSTON, MASS.

TO THE EDITOR:

In your "Odds and Ends" of January 11, you refer to the fact that the Southern Pacific crosses the Sacramento River 18 times in 32 miles. In the beautiful Berkshire hills of Western Massachusetts, the Boston & Albany crosses the Westfield river 18 times in 9.4 miles, and 21 times in 15.7 miles. In this distance, the river falls 900 ft., and makes so many turns through picturesque gorges that a passenger may keep his seat on either side of the train and enjoy a continuous succession of the finest views.

J. C. IRWIN,
Valuation Engineer, Boston & Albany.

Only Woman Shop Employee

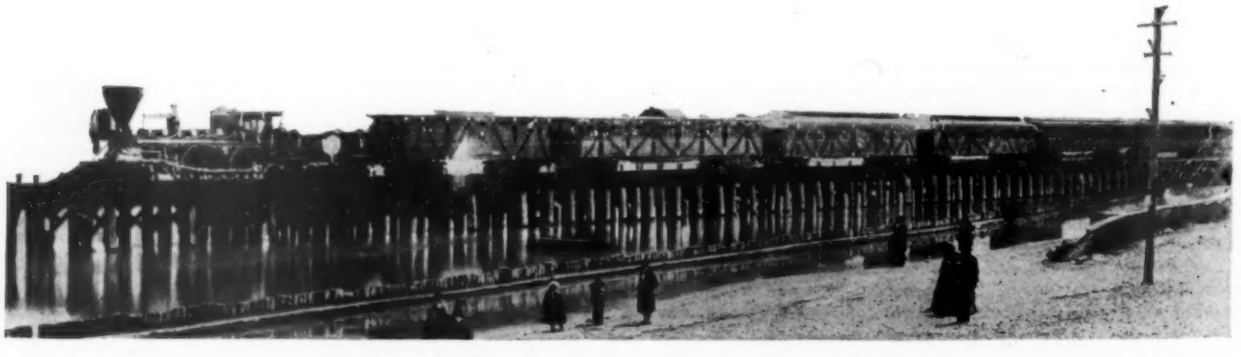
She just can't quit because she'd be so lonely without "her boys." That was the statement of Mrs. Josie Rolla, only woman employed in the Union Pacific shops and the last survivor of wartime employment of women. "The boys in the shops treat me just like a mother," said Mrs. Rolla. "I couldn't work anywhere else." In 1918, when employment was open to women in all lines while the men were away at war, Mrs. Rolla started in the paint shop as a substitute. She worked there for some time, painting and refinishing fittings for cars. At first there were many other women working, but as the men came back the women left one by one. At last one of the seamstresses left and Mrs. Rolla was put in her place in the upholstery department. There she has stayed ever since. She has watched every woman employed in the shops leave until now she is alone. Mr. Rolla also works in the Union Pacific shops, in the hose department.

Extraordinary Service

Chesapeake & Ohio locomotive 1530, one of the largest Mallets on the system, furnished heat for more than 1,600 patients and 200 staff members at the Western State Hospital, in Staunton, Va., when fire of undetermined origin destroyed the hospital's boiler house and put out of commission its seven boilers. The fire occurred when that section of Virginia was in the grip of an almost unprecedented cold spell. The first thought, of course, was for the comfort of the inmates. When it was realized that the boiler house was doomed, Dr. Joseph S. DeJarnette, superintendent, telephoned Governor Byrd, and the state's chief executive got in touch with Chesapeake & Ohio officials and asked their aid. A small engine was promptly shifted to the hospital side track and a steam line run from its boiler to the institution's heating plant. At the same time, a big Mallet was ordered from Clifton Forge, and it arrived early in the afternoon and took the place of the small locomotive. It was kept fired to the limit, and every pound of steam that its immense boiler could generate was sent through the pipe line to the heating plant.

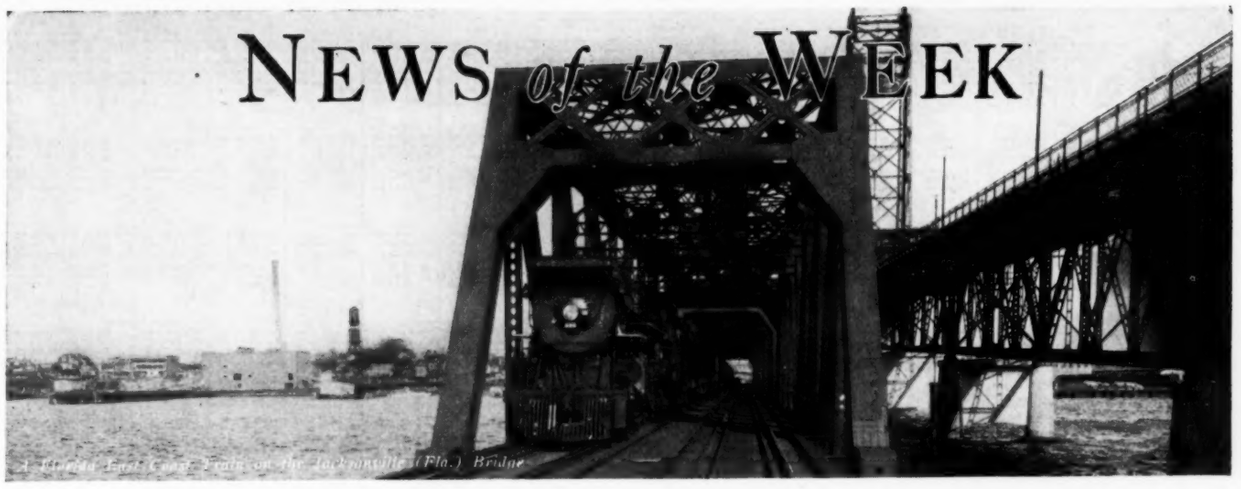
Wanted! Information Pertaining to President Lincoln's Funeral Train

The Pullman Company is endeavoring to secure information pertaining to the operation of the funeral train of President Lincoln, who died on April 9, 1865, in order to complete its historic record. The train was operated from Washington to Springfield, Ill., and is shown in the illustration on the Illinois Central tracks on the lake front in Chicago. It will be recalled that, when the Illinois Central endeavored to secure a right of way into Chicago, it was forced to build its tracks on a pile trestle in the lake. The search for information was instigated following an inquiry of J. B. Hill, president of the Nashville, Chattanooga & St. Louis, as to whether one of that company's locomotives, the "Nashville" hauled the train on a part of its journey. While the route was via Baltimore, Harrisburg, Philadelphia, New York, Albany, Buffalo, Cleveland, Columbus, Indianapolis, Chicago and, finally Springfield, some locomotives of the N. C. & St. L. were taken north late in the war. The Baltimore & Ohio records show that a different locomotive hauled the train over each division.



The Lincoln Funeral Train on the Illinois Central at Chicago

NEWS of the WEEK



A Florida East Coast Train on the Jacksonville (Fla.) Bridge

THE NATIONAL CONFERENCE ON STREET AND HIGHWAY SAFETY is to be reconvened at Washington the last week in May, and Robert P. Lamont, secretary of commerce, is inviting public officers and others interested to be present. The formal call, designating the day, will shortly be issued.

THE ST. LOUIS RAILWAY CLUB will hold its next meeting on Friday evening, March 14, at the Hotel Statler. E. H. McReynolds, assistant to the president of the Missouri Pacific, will speak on "The St. Louis Gateway and its Relation to Transportation of the Future."

THE CENTRAL RAILWAY CLUB will hold its next meeting at Hotel Statler, Buffalo, N. Y., on Thursday evening, March 13. This is to be "Canadian National night" and M. A. Humber, supervisor of apprentices of the Canadian National, will be the speaker of the evening. Music will be provided by the Highland Pipe Band, composed of C.N.R. employees. Ladies are invited to this meeting and at the close there will be a social and dancing.

DR. WILLIAM W. SPLAWN, dean of the school of political science, American University, Washington, D. C., has been retained by the House committee on interstate and foreign commerce as counsel in connection with its investigation of the ownership of railroad securities by holding companies, investment trusts, etc.

THE INTERSTATE COMMERCE COMMISSION has issued its annual order directing the railroads to report the amount of their net railway operating income for 1929 and the value of the property showing whether they have earned an excess over 6 per cent. Half of the excess is to be sent to the commission.

New York Central Pensions

The railroads making up the New York Central Lines retired on pension in the past calendar year 737 employees, including 101 who were retired at their own request, having reached the age of 65, after 40 years of service.

The average of the pensions granted in 1929 was $771.84; in the year 1910, the average was $275. There are now on the rolls 5,206 persons to whom the payments during 1929 amounted to $2,883,631. It is estimated that the sum of $23,036,000 will be required to pay to termination the 4,682 pensions in effect at the beginning of 1930.

The ratio of pensioned employees to the total number of 161,975 employees in service on the roads on which the pension system is in effect, was 2.89 per cent.

Wage Statistics for December

Class I railways reported to the Interstate Commerce Commission a total of 1,605,085 employees as of the middle of the month of December, a decrease of 75,942 as compared with the number in November and of 16,825 as compared with December, 1928. The total compensation was $234,081,322, an increase of 1.36 per cent as compared with December, 1928, because of increased overtime employment and higher average hourly earnings.

Medals for Pennsylvania Employees

Heroic service medals have been presented by the directors of the Pennsylvania to six employees, the presentation having been made in the general office at Philadelphia on February 26. The recipients were Samuel E. Osman, John Monahan, Herman D. Sigal, J. H. Sheaffer, J. E. Flack and W. T. Anderson. Eighty-six awards of this kind, altogether, have been made since the adoption of the plan in December, 1922. Five of the six named were trainmen. The first named, Osman, riding in a locomotive near Pardee, Pa., on November 18, 1928, when a child was seen on the track a short distance ahead, ran forward to the pilot, jumped off and saved the child, the engine having been moving about eight miles an hour. It ran about 50 ft. beyond the point where the child had been sitting.

Efficiency Trophies on the Central of Georgia

The Central of Georgia makes annual recognition of the efforts of employees on the basis of a combined record of safety, efficiency and economy. For 1929, the divisional trophy was won by the Savannah division; it was for very high average prevention of injuries, for conservation of fuel and for elimination of errors in handling freight. The Augusta yard recorded no personal injury for 1041 days.

Of the large agencies, Chattanooga took the trophy for only one error in 914 tons in its work of loading l. c. l. freight; Eufaula took the premium among smaller stations.

The Savannah shops had only three injuries for every million man-hours worked during 1929. For seven years no passenger has been killed or injured on the Central of Georgia.

Regional Advisory Board Meetings in March

The following Regional Advisory Boards will meet during March:

The Southwest Shippers' Advisory Board on March 6, at Alexandria, La.
The Southeast Shippers' Advisory Board on March 7, at Birmingham, Ala.
The Allegheny Regional Advisory Board on March 13, at Pittsburgh, Pa.
The Trans-Missouri-Kansas Shippers' Advisory Board on March 19, at Jefferson City, Mo.
The New England Shippers' Advisory Board on March 19, at Boston, Mass.
The Pacific Coast Transportation Adivsory Board on March 21, at Los Angeles, Cal.
The Great Lakes Regional Advisory Board on March 26, at Detroit, Mich.

Equipment on Order

The railroads had more freight cars on order on February 1 this year than on any similar date since 1926, the Car Service Division of the American Railway Association announces. The total was 33,924, an increase of 3,708 cars above the number on order on February 1, 1929, and an increase of 14,876 cars above that on the same day two years ago. It was, however, a reduction of 16,712 cars below February 1, 1926. The total included 19,873 box cars, an increase of 6,022 compared with the same date last year, 11,353 coal cars, an increase of 398, 967 refrigerator cars, 1,357 flat cars, 274 stock cars and 100 other miscellaneous freight cars.

Locomotives on order on February 1 numbered 441, compared with 278 on the same day in 1929, and 173 in 1928. The number of locomotives on order on February 1 this year was also greater than the number on order on any corresponding date since February 1, 1926, when there were 493.

New freight cars placed in service in January this year totaled 8,659, compared

(*Continued on page 615*)

Revenues and Expenses of Railways

MONTH OF JANUARY OF CALENDAR YEAR 1930

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
Akron, Canton & Youngstown	Jan.	171	$219,774	$104	$227,858	$28,939	$28,801	$15,188	$74,290	$18,566	$162,920	71.5	$64,938	$47,545	$23,887	$79,113
Atchison, Topeka & Santa Fe	Jan.	9,630	10,572,309	2,820,603	14,756,225	1,769,996	3,481,011	448,112	5,054,150	473,509	11,246,073	76.2	3,510,152	2,308,621	2,240,100	3,605,879
Gulf, Colorado & Santa Fe	Jan.	1,943	1,664,134	156,300	1,942,344	479,011	484,423	58,446	710,372	68,809	1,788,855	92.1	153,489	56,962	—82,722	496,874
Panhandle & Santa Fe	Jan.	1,569	1,086,692	92,314	1,255,224	208,068	296,642	20,058	417,748	41,743	972,385	77.5	282,839	230,927	102,188	269,451
Atlanta & West Point	Jan.	93	143,465	50,323	219,828	18,667	36,975	12,764	84,097	11,395	168,536	76.7	51,292	36,849	24,143	19,982
Western of Alabama	Jan.	133	162,793	55,199	240,313	28,714	45,897	13,366	81,627	12,994	186,327	77.5	53,986	38,355	39,912	17,187
Atlanta, Birmingham & Coast	Jan.	639	281,997	19,726	340,118	92,841	81,751	30,341	153,205	20,833	389,594	114.5	—49,476	—64,772	—76,322	—41,482
Atlantic Coast Line	Jan.	5,154	4,193,073	1,414,243	6,202,151	853,538	1,118,393	187,034	2,131,919	178,857	4,569,255	73.7	1,632,896	1,106,545	1,010,559	1,456,691
Charleston & Western Carolina	Jan.	342	209,397	9,321	226,610	69,462	38,558	7,581	96,285	7,379	219,265	96.8	7,345	—10,165	—13,613	34,300
Baltimore & Ohio	Jan.	5,658	14,621,539	1,694,021	17,420,403	2,071,880	3,867,253	566,622	6,553,293	688,336	13,933,707	80.0	3,486,696	2,431,815	2,251,253	2,715,615
Baltimore & Ohio Chic. Term.	Jan.	85	.....	.....	311,973	—3,026	40,953	2,684	180,479	18,804	246,733	79.1	65,240	—421	104,246	57,485
Staten Island Rapid Transit	Jan.	23	55,856	121,670	188,377	15,417	14,481	2,308	104,377	15,666	152,249	80.8	36,128	18,628	9,879	—1,782
Bangor & Aroostook	Jan.	619	822,949	74,261	926,683	117,301	137,621	5,096	225,932	27,637	516,146	55.7	410,537	337,975	322,586	237,382
Belt Ry. Co. of Chicago	Jan.	48	.....	.....	629,155	57,204	87,806	4,386	310,312	11,412	471,120	74.9	158,035	105,178	143,843	164,902
Bessemer & Lake Erie	Jan.	227	627,969	6,630	651,135	64,382	345,126	14,502	242,402	36,196	704,482	108.2	—53,347	—85,500	—45,611	46,076
Bingham & Garfield	Jan.	33	34,209	.....	35,316	765	6,783	1,918	9,275	4,981	23,857	67.6	11,459	4,282	21,452	23,116
Boston & Maine	Jan.	2,077	3,838,658	1,319,202	5,907,634	1,034,761	961,394	88,183	2,277,915	228,618	4,616,063	78.1	1,291,571	1,046,469	816,555	897,511
Brooklyn Eastern Dist. Term.	Jan.	11	117,534	.....	120,110	7,373	18,279	689	37,662	5,575	69,578	57.9	50,532	43,160	43,160	42,246
Buffalo & Susquehanna	Jan.	253	139,069	1,015	151,276	30,061	60,263	2,127	46,065	7,884	146,400	96.8	4,876	2,801	19,406	55,270
Buffalo, Rochester & Pittsburgh	Jan.	601	1,271,231	69,191	1,381,010	151,470	416,277	38,705	535,212	47,993	1,191,913	86.3	189,097	149,097	186,559	250,959
Canadian Pacific Lines in Maine	Jan.	233	182,071	30,619	228,202	17,096	58,843	7,122	111,906	4,423	199,390	87.4	28,812	14,312	—4,424	33,192
Canadian Pacific Lines in Vermont	Jan.	85	109,710	29,272	158,563	14,427	35,103	1,864	93,833	2,325	147,552	93.0	11,011	6,991	—25,310	—33,184
Central of Georgia	Jan.	1,944	1,349,233	292,549	1,839,684	194,042	325,380	68,823	759,153	86,192	1,449,014	78.8	390,670	270,444	277,967	291,109
Central of New Jersey	Jan.	692	3,497,417	697,658	4,450,265	417,212	985,299	67,582	1,813,102	146,510	3,458,123	77.7	992,142	781,528	658,050	703,755
Central Vermont	Jan.	419	442,350	92,395	596,398	86,651	105,672	18,469	283,323	28,705	524,979	88.0	71,419	55,424	79,860	100,055
Chesapeake & Ohio	Jan.	2,735	10,015,420	468,960	10,861,878	1,491,783	2,268,604	153,497	2,765,443	295,257	6,993,395	64.4	3,868,483	3,168,317	3,364,432	2,851,906
Chicago & Alton	Jan.	1,028	1,347,972	442,091	2,013,843	190,117	434,998	75,918	877,877	58,765	1,662,986	82.6	350,855	237,269	61,599	163,193
Chicago & Eastern Illinois	Jan.	946	1,439,314	280,455	1,874,340	231,156	428,691	81,955	819,655	74,438	1,643,582	87.7	230,758	110,222	—31,398	174,546
Chicago & Illinois Midland	Jan.	131	246,238	8,422	266,026	25,592	57,658	20,158	91,548	18,537	213,343	80.2	52,683	44,348	36,219	47,742
Chicago & North Western	Jan.	8,458	7,539,217	1,798,296	10,474,129	1,094,091	2,443,827	224,588	4,665,834	408,437	8,849,959	84.5	1,624,170	844,672	619,709	626,815
Chicago, Burlington & Quincy	Jan.	9,367	9,012,736	1,393,620	11,536,744	1,054,918	1,859,737	328,984	4,525,209	396,939	8,252,174	71.3	3,284,570	2,340,059	2,089,516	2,869,325
Chicago Great Western	Jan.	1,495	1,474,212	207,364	1,818,533	150,613	296,539	82,552	854,528	57,944	1,454,072	80.0	364,461	280,894	124,439	45,738
Chicago, Indianapolis & Louisville	Jan.	647	1,020,265	149,288	1,296,016	132,825	275,841	39,655	530,359	38,676	1,028,673	79.4	267,343	191,045	66,669	112,239
Chicago, Mil., St. Paul & Pacific	Jan.	11,247	9,198,795	1,164,316	11,488,640	1,216,158	2,549,226	332,746	5,078,180	385,566	9,625,625	83.8	1,863,015	1,067,173	669,535	1,343,139
Chicago River & Indiana	Jan.	20	.....	.....	557,652	53,000	51,800	437	202,872	17,724	325,833	58.4	231,819	188,961	266,769	303,706
Chicago, Rock Island & Pacific	Jan.	7,592	7,127,044	1,512,432	9,582,451	1,233,056	2,198,066	270,723	4,171,413	369,647	8,373,619	87.4	1,208,832	662,850	257,767	1,252,549
Chicago, Rock Island & Gulf	Jan.	566	418,597	71,877	531,916	80,403	62,897	23,288	212,505	20,771	404,246	76.0	127,670	99,139	62,236	165,347
Chic., St. Paul, Minn. & Omaha	Jan.	1,746	1,739,678	282,396	2,172,387	212,239	400,954	43,194	1,041,096	87,394	1,797,245	82.7	375,142	260,910	206,928	53,874
Clinchfield Railroad	Jan.	309	554,702	12,244	576,069	53,314	134,690	21,880	121,279	18,738	350,016	60.8	226,053	156,042	247,636	274,491
Colorado & Southern	Jan.	1,035	816,567	76,274	978,378	91,140	179,376	17,654	351,814	45,366	684,248	69.9	294,130	224,004	201,738	156,220
Ft. Worth & Denver City	Jan.	696	642,457	139,625	842,541	90,168	167,668	20,084	298,536	40,507	622,045	73.8	220,496	173,204	162,555	345,354
Wichita Valley	Jan.	271	64,785	5,676	75,545	15,484	6,736	27	34,152	1,329	57,632	76.3	17,913	10,839	—6,656	35,727
Columbus & Greenville	Jan.	167	132,661	21,168	163,663	27,095	21,285	4,192	59,271	13,371	125,214	76.5	38,449	30,444	28,397	12,892
Conemaugh & Black Lick	Jan.	23	59,386	.....	123,809	10,351	24,684	990	78,600	3,289	117,914	95.2	5,895	4,895	7,618	11,884
Delaware & Hudson	Jan.	881	2,844,280	253,795	3,319,022	536,882	789,094	59,438	1,227,184	176,406	2,794,978	84.2	524,044	401,044	401,279	339,484
Delaware, Lackawanna & Western	Jan.	998	4,374,145	895,096	5,962,845	639,103	1,287,448	146,516	2,598,903	179,659	4,884,341	81.9	1,078,504	618,382	630,263	1,104,778
Denver & Rio Grande Western	Jan.	2,561	2,314,253	207,356	2,691,827	364,509	557,099	59,096	885,990	95,431	1,984,212	73.7	707,615	507,398	527,364	717,055
Denver & Salt Lake	Jan.	232	373,394	16,734	407,092	34,856	67,772	2,163	59,190	12,331	176,312	43.3	230,780	216,772	220,748	214,666
Detroit & Mackinac	Jan.	273	54,929	11,759	73,727	14,852	21,158	2,056	37,900	5,963	81,925	111.1	—8,198	—17,705	—17,937	—14,692
Detroit & Toledo Shore Line	Jan.	50	420,270	.....	422,182	33,303	38,329	7,134	109,338	8,132	196,236	46.5	225,946	193,628	103,278	128,325
Detroit Terminal	Jan.	19	.....	.....	143,563	14,300	15,609	.....	73,616	4,791	108,316	75.4	35,247	18,338	18,563	62,781
Detroit, Toledo & Ironton	Jan.	517	1,007,459	2,224	1,023,439	110,559	103,104	13,083	289,215	35,795	551,742	53.9	471,697	398,958	357,771	524,468
Duluth & Iron Range	Jan.		Included in Duluth, Missabe & Northern.													
Duluth, Missabe & Northern	Jan.	567	165,788	8,081	198,487	146,870	296,141	4,371	216,164	46,686	710,227	357.8	—511,740	—633,305	—632,948	—629,937
Duluth, Winnipeg & Pacific	Jan.	178	179,179	10,416	195,935	23,085	46,923	4,871	84,221	8,439	170,929	87.2	25,006	15,209	17,167	45,226
Elgin, Joliet & Eastern	Jan.	453	1,742,137	18	1,910,409	192,122	399,485	15,574	783,937	56,675	1,447,710	75.8	462,699	346,411	159,402	248,410
Erie Railroad	Jan.	2,046	6,403,533	803,121	7,886,259	790,566	2,012,892	194,348	3,350,715	303,456	6,681,473	84.7	1,204,786	805,159	750,317	1,302,574
Chicago & Erie	Jan.	269	1,039,588	58,182	1,176,155	103,550	120,258	32,011	388,022	51,866	695,239	59.1	480,916	422,734	130,050	146,709
New Jersey & New York	Jan.	45	20,701	91,736	117,380	11,938	32,079	1,551	69,268	3,766	118,601	101.0	—1,221	—5,592	—39,263	—20,907
N. Y., Susquehanna & Western	Jan.	131	314,597	40,200	386,382	40,884	48,304	5,370	185,389	12,057	291,962	75.6	94,420	62,851	38,926	51,259

Revenues and Expenses of Railways

MONTH OF JANUARY OF CALENDAR YEAR 1930—CONTINUED

Name of road	Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
Evansville, Indianap. & Terre Haute..Jan.	145	$167,321	$3,554	$176,158	$15,945	$20,341	$1,980	$62,046	$4,880	$103,415	58.7	$72,743	$64,548	$19,921	$29,076
Florida East Coast.....Jan.	863	698,573	514,019	1,378,588	153,559	187,325	41,627	383,628	51,276	842,566	61.1	536,022	402,255	325,941	285,742
Fort Smith & Western.....Jan.	249	115,475	8,281	132,674	20,435	24,669	5,887	47,281	7,280	105,335	79.4	27,339	22,619	14,036	27,191
Galveston Wharf .....Jan.	13	.....	.....	148,798	37,952	5,467	3,624	29,361	5,947	97,359	65.4	51,439	26,439	26,794	97,175
Georgia R. R. .....Jan.	328	314,204	48,405	391,734	40,379	79,825	22,864	179,274	22,014	344,306	87.9	47,428	37,022	54,593	51,245
Georgia & Florida .....Jan.	501	85,382	7,527	100,296	25,850	23,326	9,719	53,751	8,080	120,953	120.6	—20,657	—30,345	—28,866	—10,649
Grand Trunk Western .....Jan.		Not yet filed.													
Atlantic & St. Lawrence.....Jan.	166	150,223	24,391	190,789	30,302	44,155	5,712	104,669	7,313	193,625	101.5	—2,836	—17,736	—69,795	—97,259
Chic., Det. & Canada Gr. Tr. Jct..Jan.		Not yet filed.													
Detroit, Grand Haven & Mil.....Jan.		Not yet filed.													
Great Northern .....Jan.	8,367	4,893,540	874,784	6,458,382	691,363	1,553,761	255,671	2,997,828	241,572	5,781,553	89.5	676,829	81,512	3,067	258,743
Green Bay & Western.....Jan.	234	137,803	3,852	146,326	19,866	22,934	5,504	56,594	3,085	107,860	73.7	38,466	30,466	26,798	6,914
Gulf & Ship Island.....Jan.	307	191,701	32,391	245,911	48,637	36,057	4,871	97,219	8,414	198,203	80.6	47,708	15,574	2,003	6,927
Gulf, Mobile & Northern.....Jan.	733	470,159	30,403	524,085	88,974	99,743	34,199	176,696	30,524	430,456	82.13	93,629	64,120	35,324	90,056
Hocking Valley .....Jan.	348	1,317,066	50,881	1,455,441	170,563	337,610	18,798	441,760	50,108	1,018,489	70.0	436,952	311,961	318,976	464,353
Illinois Central .....Jan.	5,018	8,816,149	1,907,541	11,556,009	1,382,324	2,737,871	299,881	4,597,562	373,287	9,475,635	82.0	2,080,374	1,316,857	1,296,000	2,249,542
Yazoo & Mississippi Valley.....Jan.	1,705	1,654,773	279,365	2,068,165	334,764	367,260	45,013	811,073	68,186	1,620,494	78.4	447,671	278,022	199,038	186,076
Illinois Central System .....Jan.	6,724	10,483,054	2,191,526	13,640,927	1,717,088	3,109,029	344,894	5,417,538	441,583	11,109,040	81.4	2,531,887	1,597,543	1,497,702	2,436,852
Illinois Terminal .....Jan.	481	432,246	120,985	577,392	60,020	82,497	15,869	230,932	33,237	421,931	73.08	155,461	131,461	84,226	135,303
Kansas City Southern .....Jan.	784	1,168,336	74,495	1,375,868	143,025	232,385	60,489	468,192	81,981	988,281	71.8	387,587	273,870	233,537	290,915
Texarkana & Ft. Smith.....Jan.	99	168,470	5,635	190,467	20,639	21,923	7,097	57,090	10,283	118,836	62.4	71,631	55,916	26,202	80,960
Kansas, Oklahoma & Gulf.....Jan.	326	278,221	2,793	286,520	16,659	21,583	16,080	72,860	10,752	137,905	48.1	148,615	127,587	103,824	92,562
Lake Superior & Ishpeming.....Jan.	160	58,344	1,610	64,332	24,457	30,003	568	35,076	6,478	96,582	150.1	—32,250	—45,117	—50,264	—54,756
Lake Terminal .....Jan.	12	.....	.....	53,716	7,804	12,533	.....	37,282	3,183	60,802	113.2	—7,086	—13,511	—17,933	—1,604
Lehigh & Hudson River.....Jan.	96	178,465	1,036	190,733	42,766	30,813	3,352	74,914	9,448	161,293	84.6	29,440	18,919	3,833	38,156
Lehigh & New England.....Jan.	216	357,487	929	363,726	40,938	82,908	9,712	141,624	18,017	293,199	80.6	70,527	60,303	59,850	64,377
Lehigh Valley .....Jan.	1,361	4,283,692	509,049	5,194,967	328,068	1,203,738	145,156	2,318,973	167,992	4,193,943	80.7	1,001,024	719,050	599,766	603,365
Louisiana & Arkansas .....Jan.	635	503,000	20,520	545,958	83,864	114,297	21,190	190,813	22,637	432,648	79.2	113,310	68,308	29,754	66,076
Louisiana Ry. & Nav. Co. of Texas..Jan.	206	79,874	2,720	85,373	21,240	17,458	3,217	45,233	5,604	92,750	108.6	—7,377	—11,402	—26,452	—15,742
Louisville & Nashville .....Jan.	5,250	8,670,691	1,322,168	10,600,911	1,524,311	2,575,666	320,195	3,878,127	383,075	8,744,736	82.5	1,856,175	1,273,513	1,371,846	1,613,082
Maine Central .....Jan.	1,121	1,369,426	248,018	1,749,314	222,239	315,874	16,520	678,011	54,429	1,288,089	73.6	461,225	363,711	286,740	154,010
Midland Valley .....Jan.	363	213,596	9,264	231,700	19,168	34,239	6,247	75,010	12,656	147,051	63.5	84,649	70,158	48,232	100,294
Minneapolis & St. Louis.....Jan.	1,627	867,595	59,048	984,402	96,728	231,070	38,612	539,772	45,348	951,688	96.7	32,714	—32,459	—83,566	22,214
Minn., St. Paul & S. S. Marie.....Jan.	4,411	2,350,526	306,856	2,879,213	430,245	693,161	84,947	1,367,262	134,535	2,720,873	94.5	158,340	—70,898	—205,263	—3,755
Duluth, South Shore & Atlantic....Jan.	573	277,537	50,206	346,676	44,224	73,652	8,300	167,388	11,339	306,944	88.5	39,732	8,731	—7,025	—14,797
Spokane International .....Jan.	165	66,701	7,758	80,005	17,950	7,253	3,592	33,611	6,547	69,965	87.4	10,040	4,883	95	—3,264
Mississippi Central .....Jan.	150	107,970	5,880	118,433	16,872	26,157	10,611	35,578	9,226	98,444	83.1	19,989	13,585	15,115	28,220
Missouri & North Arkansas.....Jan.	364	113,072	6,949	128,036	26,345	12,274	9,221	61,988	8,288	118,430	92.5	9,606	7,142	—5,874	—14,517
Missouri-Illinois .....Jan.	202	139,433	2,603	144,830	13,911	41,426	3,797	51,884	7,576	118,581	81.9	26,249	19,449	16,087	27,744
Missouri-Kansas-Texas Lines .....Jan.	3,188	2,830,995	509,598	3,653,066	461,433	668,070	124,553	1,345,437	187,233	2,807,233	76.8	845,831	635,382	418,334	847,565
Missouri Pacific .....Jan.	7,452	8,183,362	1,083,170	10,131,231	1,127,146	1,826,129	342,901	4,116,163	402,530	7,827,461	77.3	2,303,770	1,864,820	1,446,781	1,712,989
Gulf Coast Lines .....Jan.	1,026	1,326,817	148,328	1,542,283	221,139	232,804	56,715	406,660	64,624	983,703	63.78	558,580	511,639	398,071	195,919
International-Great Northern .....Jan.	1,159	961,570	167,212	1,263,191	208,543	249,621	51,210	555,851	70,336	1,138,520	90.13	124,671	81,631	5,423	82,534
San Antonio, Uvalde & Gulf.....Jan.	318	85,449	16,993	113,964	42,949	15,183	7,140	29,084	7,902	101,091	88.7	12,873	8,247	—18,558	—5,135
Mobile & Ohio .....Jan.	1,159	1,007,540	84,128	1,158,657	174,500	253,398	59,985	491,030	58,807	1,015,461	87.6	143,196	55,564	8,143	107,480
Monongahela .....Jan.	178	559,726	8,544	572,967	80,000	70,000	1,355	159,164	11,330	320,598	56.0	252,369	233,130	125,355	188,615
Monongahela Connecting .....Jan.	6	.....	.....	171,853	19,687	32,928	327	81,873	2,815	137,630	80.1	34,223	26,344	19,032	31,725
Montour .....Jan.	57	192,956	.....	193,083	16,871	57,244	1,397	55,032	7,213	137,757	71.3	55,326	53,551	64,692	67,701
Nashville, Chattanooga & St. Louis...Jan.	1,203	1,254,862	234,641	1,662,256	208,894	378,301	101,786	660,178	81,984	1,445,391	87.0	216,865	152,795	155,783	243,837
Nevada Northern .....Jan.	165	66,957	4,261	79,329	11,144	6,026	1,041	16,678	4,551	39,638	50.0	39,691	28,736	28,395	53,043
Newburgh & South Shore.....Jan.	6	.....	.....	89,749	11,381	34,735	.....	54,778	6,631	107,525	119.8	—17,776	—33,797	—33,047	8,219
New Orleans Great Northern.....Jan.	276	221,854	13,213	242,908	23,603	50,796	12,396	81,356	15,011	180,766	74.4	62,142	47,199	14,261	37,835
New Orleans Terminal .....Jan.	20	1,180	.....	106,831	17,571	10,675	.....	55,851	1,732	85,829	80.3	21,002	9,745	4,203	21,807
New York Central .....Jan.	6,915	17,268,008	8,063,796	29,210,169	3,409,498	6,788,908	501,675	10,732,115	1,000,251	23,037,928	78.9	6,172,241	3,903,613	3,683,083	4,428,979
Cincinnati Northern .....Jan.	244	335,376	2,228	342,483	26,275	56,730	6,211	111,792	10,218	211,226	61.7	131,257	105,902	83,334	18,037
Cleve., Cinn., Chicago & St. Louis..Jan.	2,398	5,116,385	1,187,161	6,826,920	583,889	1,631,708	169,087	2,787,690	259,767	5,529,348	81.0	1,297,572	914,593	794,204	1,146,206
Indiana Harbor Belt .....Jan.	120	.....	.....	930,252	90,000	114,000	5,305	468,712	28,000	720,669	77.5	209,583	160,233	159,762	156,971
Michigan Central .....Jan.	1,858	4,348,586	1,587,395	6,549,200	580,202	1,351,323	146,148	2,427,629	184,860	4,818,616	73.6	1,730,539	1,312,980	1,018,021	1,494,127
Pittsburgh & Lake Erie.....Jan.	231	2,043,623	176,975	2,295,291	299,679	726,678	37,075	856,341	79,089	2,010,249	87.6	285,042	135,042	436,785	517,039
New York, Chicago & St. Louis.....Jan.	1,690	3,795,566	156,963	4,098,976	429,179	811,974	134,580	1,641,048	149,035	3,168,029	77.3	930,947	712,248	488,339	656,354

Revenues and Expenses of Railways

MONTH OF JANUARY OF CALENDAR YEAR 1930—CONTINUED

Name of road	Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
N. Y., New Haven & Hartford.....Jan.	2,133	$5,245,433	$3,780,088	$10,182,338	$1,138,692	$1,708,053	$106,919	$3,526,673	$353,492	$7,039,759	69.1	$3,142,579	$2,472,400	$1,882,368	$1,868,132
New York Connecting .....Jan.	20	199,014	.....	222,839	15,958	7,547	.....	36,402	1,762	61,669	27.7	161,170	123,170	93,439	—46,391
New York, Ontario & Western.....Jan.	568	695,063	38,511	872,530	94,563	177,455	19,038	428,137	38,779	765,647	87.8	106,883	64,296	21,867	—33,969
Norfolk & Western .....Jan.	2,240	8,392,766	412,272	9,103,506	1,115,505	1,794,862	126,179	2,269,394	259,146	5,610,729	61.6	3,492,777	2,592,189	2,853,056	2,910,639
Norfolk Southern .....Jan.	931	485,418	25,354	549,111	80,811	88,003	29,052	238,211	29,853	465,764	84.8	83,347	30,733	20,653	50,238
Northern Pacific .....Jan.	6,783	4,413,586	633,637	5,679,895	559,823	1,525,629	206,152	2,694,179	274,558	5,358,574	94.3	321,521	—345,403	—20,718	677,639
Northwestern Pacific .....Jan.	476	221,747	108,058	362,890	101,566	100,198	8,371	205,159	17,973	432,834	119.3	—69,944	—106,400	—108,007	—112,294
Pennsylvania R. R. .....Jan.		Not yet filed.													
Long Island .....Jan.		Not yet filed.													
West Jersey & Seashore.....Jan.		Not yet filed.													
Peoria & Pekin Union.....Jan.	19	17,055	1,668	147,665	14,918	13,792	5,106	72,423	8,139	114,378	77.5	33,287	15,958	30,113	43,520
Pere Marquette .....Jan.	2,241	2,665,094	220,962	3,065,730	470,085	883,759	78,993	1,252,977	123,405	2,809,555	91.6	256,175	38,279	—177,056	478,066
Pittsburgh & Shawmut .....Jan.	102	116,664	4,520	122,262	15,156	27,659	1,597	36,572	7,818	88,802	72.6	33,460	32,173	36,474	54,806
Pittsburgh & West Virginia.....Jan.	92	297,040	3,439	329,307	23,101	75,010	18,777	64,765	19,427	211,732	64.3	117,575	90,873	134,229	230,325
Pittsburgh, Shawmut & Northern....Jan.	198	140,686	1,306	145,633	21,436	26,338	1,623	50,659	6,382	106,438	73.1	39,195	36,286	30,785	32,634
Quincy, Omaha & Kansas City.....Jan.	249	38,292	6,812	50,904	18,287	5,021	931	26,476	3,442	54,072	106.2	—3,168	—7,868	—10,266	—4,668
Reading .....Jan.	1,460	6,578,883	606,345	7,603,633	1,095,179	1,958,194	97,608	3,046,852	238,169	6,460,018	85.0	1,143,615	846,198	871,265	1,345,017
Atlantic City .....Jan.	163	122,257	67,464	206,923	72,439	25,261	2,523	168,933	4,984	274,326	132.6	—67,403	—107,403	—126,865	—141,523
Richmond, Fredericksburg & Potomac.Jan.	117	435,718	386,074	993,510	87,131	183,810	11,615	357,313	39,714	702,202	70.7	291,308	239,306	164,843	232,837
Rutland .....Jan.	413	238,546	90,051	433,679	85,403	107,654	12,441	186,663	18,068	412,076	95.0	21,603	6,561	15,824	34,421
St. Louis-San Francisco .....Jan.	5,314	4,909,182	884,511	6,259,267	745,319	1,285,125	137,238	2,355,028	237,200	4,732,448	75.61	1,526,819	1,147,315	1,172,263	1,474,643
Ft. Worth & Rio Grande.....Jan.	233	69,166	6,241	85,012	16,690	16,482	2,864	41,875	4,427	82,304	96.8	2,708	—1,926	—10,071	5,993
St. Louis-San Francisco & Texas...Jan.	154	114,615	10,614	130,789	20,261	23,033	5,972	55,438	8,274	113,229	86.6	17,560	14,133	—13,490	—5,584
St. Louis Southwestern .....Jan.	1,010	1,093,898	58,474	1,229,920	158,212	238,848	81,861	421,536	73,964	977,137	79.4	252,783	222,403	92,555	340,271
St. Louis Southwestern of Texas....Jan.	806	471,690	33,899	566,088	157,365	134,271	27,287	286,486	37,124	653,583	115.5	—87,495	—116,358	—95,085	—109,828
San Diego & Arizona.....Jan.	156	79,814	25,774	107,464	16,376	16,969	4,551	29,142	8,370	76,809	71.5	30,654	25,277	25,889	29,722
Seaboard Air Line .....Jan.	4,498	3,583,832	879,943	4,917,246	612,512	812,661	215,142	1,760,380	178,866	3,665,036	74.5	1,252,210	921,526	807,517	839,990
Southern Ry. .....Jan.	6,731	8,059,057	1,798,588	10,721,354	1,735,429	2,127,001	243,471	3,893,940	385,097	8,470,362	79.0	2,250,992	1,495,833	1,325,933	2,127,503
Alabama Great Southern .....Jan.	314	547,733	115,360	712,891	135,129	180,328	21,373	245,598	25,811	614,589	86.2	98,302	54,146	62,128	163,687
Cinn., New Orleans & Texas Pac...Jan.	338	1,283,975	263,629	1,639,419	282,227	371,291	42,204	489,146	56,352	1,255,138	76.6	384,281	293,525	301,967	384,814
Georgia Southern & Florida.....Jan.	397	199,972	124,890	354,736	71,360	72,452	1,716	131,932	2,760	288,530	81.3	66,206	45,411	45,295	8,941
New Orleans & Northeastern.....Jan.	204	303,749	56,067	384,141	66,437	68,745	11,737	127,876	14,232	292,744	76.2	91,397	49,030	2,535	63,788
Northern Alabama .....Jan.	110	96,521	4,813	104,033	28,911	3,791	2,133	33,121	3,022	70,978	68.2	33,055	27,030	5,255	28,164
Southern Pacific .....Jan.	9,130	10,573,879	3,179,266	15,082,840	1,985,856	3,123,014	405,889	5,584,813	687,635	12,059,258	80.0	3,023,582	1,797,826	1,518,603	2,504,540
So. Pacific Steamship Lines.....Jan.	....	582,694	38,443	664,455	16,592	174,622	24,044	476,271	30,529	722,058	108.7	—57,603	—58,914	—55,942	—39,172
Texas & New Orleans.....Jan.	4,721	4,020,472	831,528	5,267,627	940,699	1,176,803	169,852	1,898,427	268,958	4,476,276	85.0	791,351	499,253	230,917	410,410
Spokane, Portland & Seattle.....Jan.	554	456,198	74,664	593,810	58,584	101,483	11,924	239,860	23,713	441,812	74.4	151,998	64,905	45,732	135,716
Tennessee Central .....Jan.	296	220,060	11,217	245,232	42,377	43,668	10,063	95,770	14,435	205,965	84.0	39,267	33,467	17,802	20,459
Term. R. R. Assn. of St. Louis.....Jan.	55	.....	.....	922,868	120,648	99,590	3,343	473,491	29,920	731,152	79.2	191,716	105,871	206,991	302,095
Texas & Pacific .....Jan.	1,955	2,483,209	436,212	3,144,423	557,191	606,257	96,695	1,157,976	132,943	2,559,271	81.4	585,152	399,715	182,526	568,285
Texas Mexican .....Jan.	162	66,391	2,820	81,550	17,777	15,836	4,695	39,675	7,364	85,537	104.9	—3,987	—8,989	—17,799	6,901
Toledo, Peoria & Western.....Jan.	239	146,756	373	150,215	23,207	29,976	13,286	75,224	9,277	150,970	100.5	—755	—1,459	—10,295	43,019
Toledo Terminal .....Jan.	28	.....	.....	110,087	7,677	19,087	595	52,890	5,107	85,345	77.5	24,742	9,242	32,794	49,631
Trinity & Brazos Valley.....Jan.	367	168,014	5,912	185,756	94,571	35,078	6,838	80,672	12,560	224,501	120.9	—38,745	—46,967	—75,612	—20,744
Ulster & Delaware .....Jan.	128	19,551	2,662	54,674	12,532	14,378	1,182	34,087	4,073	66,252	121.2	—11,578	—14,878	—15,494	—16,090
Union R. R. of Penna.....Jan.	45	.....	.....	629,206	60,880	168,206	151	328,723	15,085	572,881	91.0	56,325	19,725	83,949	140,953
Union Pacific .....Jan.	3,765	5,985,138	980,081	7,658,079	520,143	1,773,200	160,520	2,602,272	334,041	5,534,130	72.3	2,123,949	1,410,604	1,298,244	1,912,930
Oregon Short Line .....Jan.	2,538	2,279,892	271,418	2,731,194	277,304	452,251	51,992	911,751	124,880	1,859,710	68.1	871,484	569,626	486,047	749,420
Oregon-Wash. R. R. & Nav.....Jan.	2,364	1,499,680	206,567	1,903,828	254,841	311,641	77,889	875,536	124,399	1,674,256	87.9	229,572	36,054	—59,742	—8,748
Los Angeles & Salt Lake.....Jan.	1,225	1,534,467	319,243	2,023,393	274,150	334,379	72,265	683,042	84,987	1,517,184	75.0	506,209	330,686	205,326	285,549
St. Joseph & Grand Island.....Jan.	258	259,121	9,032	277,964	24,780	33,700	3,536	104,039	15,800	182,690	65.7	95,274	75,218	58,259	74,210
Utah .....Jan.	111	270,789	.....	272,971	31,545	47,156	356	65,088	7,388	151,533	55.5	121,438	98,638	71,174	97,928
Virginian .....Jan.	545	1,756,607	28,439	1,873,745	153,994	298,674	14,218	352,424	32,038	853,383	45.5	1,020,362	823,362	898,025	851,526
Wabash .....Jan.	2,523	4,378,776	549,120	5,300,034	421,627	984,241	202,500	2,364,485	266,609	4,263,576	80.4	1,036,458	798,337	429,905	817,182
Ann Arbor .....Jan.	293	373,355	14,352	399,772	30,044	84,332	14,748	183,087	12,179	323,831	81.0	75,941	49,688	16,324	47,140
Western Maryland .....Jan.	878	1,489,783	21,139	1,562,927	199,277	290,189	46,945	448,397	47,387	1,033,584	66.1	529,343	439,343	462,711	408,271
Western Pacific .....Jan.	1,051	1,021,746	52,750	1,139,887	206,664	270,857	67,533	486,664	49,483	1,107,587	97.2	32,300	—69,592	—31,503	135,852
Wheeling & Lake Erie.....Jan.	511	1,223,685	20,642	1,317,037	111,824	329,959	39,098	428,884	49,042	960,062	72.9	356,975	229,502	229,793	318,879
Wichita Falls & Southern.....Jan.	203	66,798	789	71,320	13,023	10,910	3,075	27,508	5,337	59,853	83.92	11,467	5,970	177	24,278

News of the Week

(*Continued from page 611*)

with 1,129 in the same month last year and 2,899 in January, 1928. New locomotives placed in service in January, 1930, totaled eighty compared with 48 in January last year and 154 two years ago.

Freight cars or locomotives leased or otherwise acquired are not included in the above figures.

The C. P. R. in January

Earnings of the Canadian Pacific for January, reveal once more the important effect that the grain tie-up is having on the operations of the Canadian roads.

Net for January is shown at $735,783, as compared with $1,895,932 in the corresponding month of last year, a decrease of $1,160,149, and constituting the lowest net that this railroad has reported for any month since January of 1925.

Gross earnings for the month under review amounted to $12,671,403, a decrease of $3,194,195 from the gross for January of last year, while expenses at $11,935,620 were $2,034,046 below those for the corresponding month of last year.

The following table shows the earnings, expenses and net profits for the month of January, with comparisons:

	1930	1929	Dec.
Gross	$12,671,403	$15,865,599	$3,194,195
Exp.	11,935,620	13,969,667	2,034,046
Net	$735,783	$1,895,932	$1,160,149

C. N. R. Reorganization Promised in Speech from Throne

The definite announcement was made in the Speech from the Throne, read at the opening of the session of the Canadian Parliament in Ottawa last week, of the intention of the government to introduce legislation "respecting the several properties formerly privately owned and now embraced in the Canadian National Railway system." This is taken to mean that at this session instead of completely reorganizing the financial structure of the national system with the abolition of the debt owing the Dominion government and amounting to about $900,000,000, as had been intended, there will be attempted only the closer welding, legally and corporately, into the national system of the forty-odd small companies whose names appear in the annual reports of the national system but which still have private shareholders and much of the official machinery of separate companies. Next session the financial features of the problem will be dealt with.

Baltimore & Ohio Celebrates With a Dinner

The reduction in casualties among employees on the Baltimore & Ohio in 1929 was 49.7 per cent, as compared with 1928; such a remarkable record that a dinner was held in Baltimore on March 3 to celebrate it.

Winners in the safety contest are named as follows: J. P. Kane, superintendent, bolt and forge shops, Cumberland, Md., whose men showed one hundred per cent decrease in accidents; R. S. Welch, division engineer, Cincinnati Terminal division, Cincinnati, with a 95 per cent decrease; R. H. Cline, master mechanic, Grafton, W. Va., 93 per cent; J. E. Fahy, superintendent, Garrett, Ind., 75 per cent; J. D. Beltz, superintendent, Connellsville, Pa., 60 per cent; F. B. Mitchell, general superintendent, Cleveland, O., 57 per cent, and C. W. Van Horn, general manager, Cincinnati, O., 53 per cent decrease. Also special awards were made to C. G. Slagle, master mechanic, Indianapolis, and J. M. Shay, master mechanic, Cincinnati, O.

Signal Section Program

The program of the annual meeting of the Signal Section of the American Railway Association at Stevens Hotel, Chicago, March 10 and 11, shows the following order of business, condensed:

Monday morning, address by H. E. Newcomet, vice president, Pennsylvania; annual reports; and committee reports on (I) economics of railway signaling, (IX) overhead and underground lines, (X) signaling practice.

Monday afternoon, committee reports on highway crossing protection; (VIII) a.c. automatic block signaling, (IV) d.c. automatic block signaling, (VI) designs, (XI) chemicals.

Tuesday morning, addresses by C. E. Denney, president, Erie, and M. J. Gormley, vice president, A. R. A.; committee reports on (II) interlocking, (V) instructions, (VII) contracts.

Equipment in Need of Repair

Class I railroads on February 15 had 121,744 freight cars in need of repair or 5.5 per cent of the number on line, according to the Car Service Division, American Railway Association. This was a decrease of 2,516 over February 1, at which time there were 124,260 or 5.6 per cent. Freight cars in need of heavy repairs on February 15 totaled 85,248 or 3.9 per cent, an increase of 1,349 compared with February 1, while freight cars in need of light repair totaled 36,496 or 1.6 per cent, a decrease of 3,865 compared with February 1.

Locomotives in need of repair on February 15 totaled 8,541 or 15.2 per cent of the number on line. This was an increase of 604 compared with February 1, at which time there were 7,937 or 14.1 per cent. Locomotives in need of classified repairs on February 15 totaled 4,635 or 8.2 per cent, an increase of 353 compared with February 1, while 3,906 or seven per cent were in need of running repairs, an increase of 251 over February 1. Class I railroads on February 15 had 6,011 serviceable locomotives in storage compared with 5,958 on February 1.

Federal Regulation of Motor Vehicles

Consideration in the House of the Parker bill for the regulation by the Interstate Commerce Commission of common carrier passenger motor vehicle transportation on public highways, which was planned for March 4, was postponed to March 6, on account of the death of a member of the House and the fact that Wednesday is the day set aside for the consideration of bills which have been on the calendar. The bill was to be considered under a special rule allowing six hours debate. A favorable report on the bill was submitted to the House on February 27 by the committee on interstate and foreign commerce and the bill was reintroduced with the committee changes as H. R. 10,288.

Charles Webster, president of the National Association of Railroad and Utilities Commissioners, telegraphed members of the Iowa delegation urging amendment of the bill, stating that the association is "unalterably opposed to the proposed section limiting the joint boards to only two states" and asking an amendment to provide that nothing in the act shall authorize interference with intrastate commerce.

New York Central Safety Records

President P. E. Crowley, of the New York Central, on February 27, at a meeting of officers of the road, in New York City, presented plaques to the winners in each of the two groups, Group A and Group B, for the best employee safety record in the year 1929. The New York Central System is made up of 12 railroads (the New York Central proper counting as two, Lines East and Lines West), and Group A consists of the larger roads and Group B the smaller ones. In Group A the winner was the Cleveland, Cincinnati, Chicago & St. Louis, with a ratio of 8.48 casualties per million man hours; in Group B, the Chicago River & Indiana was the winner, with a ratio of 5.30.

Charles E. Hill, general safety agent, in summarizing the records of 1929 said that in the A. R. A. competition, calling for 35 per cent reduction in casualties to employees in seven years from 1923, the New York Central lines had gone far ahead of the goal, having shown at the close of 1929 a decrease of 65.5 per cent. In the six years ending with 1929, the New York Central lines have carried more than five hundred million passengers and, in that time, have had to record only two passengers killed in train accidents, one in 1925 and one in 1927.

Another striking comparison cited by Mr. Hill was the following: Employees killed and injured on duty in the year 1913, killed, 354, injured, 13,107; in 1929, killed, 140, injured, 4,206. In 1913, there were 44 employees killed in train accidents, in 1929 only four; in 1913 the number injured in train accidents was 620, while in 1929 it was 50.

R. A. C. Henry to Go with Power Company

R. A. C. Henry, Deputy Minister of Railways and Canals of Canada, will resign in the near future to become vice-president and general manager of the Beauharnois Light, Heat & Power Company. Mr. Henry, who until he became

Deputy Minister of Railways was director of the bureau of economics of the Canadian National, has for a number of years been recognized as a transportation expert. He was given charge of the complex engineering studies made on behalf of the Canadian government in connection with the Grand Trunk Arbitration and upon the amalgamation of the Grand Trunk into the Canadian National, he became director of the bureau of economics of the new system. Upon

R. A. C. Henry

the death of the former Deputy Minister of Railways, Major Graham A. Bell, Mr. Henry was appointed to that position, which he has held since February, 1929. Born at Montreal in 1884, Mr. Henry was graduated from McGill University with the degrees of B. A. and B. Sc., and joined the Canadian Pacific engineering forces on its western lines, working from the position of chainman to that of assistant engineer. He was in government service in the Department of the Interior (Water Powers) 1908-1909; superintendent on various construction works, 1910-11; joined the Department of Railways and Canals, May, 1912, filling successively positions of inspecting engineer, assistant engineer, general assistant engineer and engineer in charge of Grand Trunk Arbitration; also special engineer. Mr. Henry is a member of the board of directors of the Canadian National.

Salary Increases, Pensions and Longer Tenure for Canada's Commission

In the main estimates tabled in the Canadian House of Commons at Ottawa last week by Hon. Charles Dunning, Minister of Finance, is an item of $5,900,000 for construction and betterments in connection with the Hudson Bay Railway and terminals. This is a decrease of $600,000 from the amount asked for the previous fiscal year, that is the 12 months ending March 31, 1930. There are the usual amounts for the activities of the Board of Railway Commissioners, totaling $316,240, which does not include the $53,500 for salaries of the Commissioners.

Generous provision both in salaries and retiring allowances for the Railway Commissioners is recommended in the report of the Royal Commission appointed by the federal government and headed by President E. W. Beatty, of the Canadian Pacific, to inquire into the salaries of technical officers in the employ of the government. The report was made public a week ago and later in the session legislation will be introduced by the government to carry out the recommendations in the report.

In addition to recommending a salary of $8,000 for the chief traffic officer of the Board the Beatty Commission's recommendations for the Commissioners follow:—

We have considered carefully the position of the Board of Railway Commissioners. Its members bear heavy responsibilities, and upon the wisdom of their decisions depend, to no small extent, the welfare of the country and the public, and the enormous transportation interests of the Dominion. Moreover, their work is at times strenuous, and demands a strong physical constitution, as well as sound judgment and knowledge. The terms of their employment should obviously be such as to offer a permanent attraction to men of vigour and unusual ability. When the board was originally constituted, the salaries of its members appear to have been fixed with this consideration in mind; and they were actually higher, at that time, than the salaries of judges in the Supreme Court. In recent years, however, they have not been raised so as to keep pace with the rapid increase in the salaries of other important appointments in the public service. The limited tenure of office and the absence of a pension provision are also factors tending to make a seat on the board less attractive than it should be; and although retiring members are very properly eligible for reappointment, there is an age beyond which they should not be called upon to perform duties of an arduous character, which may involve long periods of travel under varying conditions. We therefore recommend, in regard to the Railway Commissioners:

(1) That their salaries be raised as follows: the Chief Commissioner to receive $15,000 annually; the Assistant Chief Commissioner, $12,000; the Deputy Chief Commissioner, $11,000; and the remaining members of the board, $10,000;

(2) That retiring members of the board be made eligible for pension, on a non-contributory basis, at the rate of one-third of total salary for those with ten or more, but less than twenty years of service; and at the rate of two-thirds of total salary, for those with twenty years of service and upwards; and

(3) That the age limit for members of the board be reduced from seventy-five years to seventy.

(4) We recommend also that the tenure of future appointments be similar to that of judges of the Supreme Court of Canada, instead of for a term of years.

Traffic

The Cleveland, Cincinnati, Chicago & St. Louis has established a new train between Cleveland, Ohio, and St. Louis, Mo., known as the Cleveland-St. Louis Special. The train leaves Cleveland at 12:50 p.m. eastern time, and arrives at St. Louis at 11:35 p.m. central time.

Pullman lounge cars of the latest type are now in use on three trains of the Southern: The Aiken-Augusta Special; the Washington - Chattanooga - New Orleans Express and the Royal Palm. These cars have 14 seats available for smokers in the day time and the very latest design of mattresses for the comfort of passengers at night.

The Palace Live Poultry Car Company has been incorporated by the North American Car Corporation to carry on its poultry car operations. The new company will operate a fleet of 2,700 live poultry cars, composed of those formerly operated by another North American subsidiary and those acquired from the Live Poultry Transit Company.

Frisco Employees' Clubs, the activities of which include the solicitation of freight and passenger traffic, secured a total of 9,189 carlot shipments, 9,269 l.c.l. shipments, and 7,905 passengers during 1929. This is an increase in carload business over 1928 of 42.73 per cent, an increase in l.c.l. business of 6.81 per cent and an increase in passengers secured of 41.77 per cent.

The Interstate Commerce Commission has suspended until September 24, the operation of tariff schedules which propose to eliminate certain direct routes in connection with joint through freight rates between points on the Pan Handle & Santa Fe in Texas and points in Colorado, Nebraska, New Mexico and Wyoming and establish in lieu thereof more or less indirect routes via the Atchison, Topeka & Santa Fe system lines and connections.

The Associated Traffic Clubs of America will hold their eighth annual meeting at Cincinnati, Ohio, on April 24 and 25. On the first day the speakers will be E. I. Lewis of the Interstate Commerce Commission, W. R. Cole, president of the Louisville & Nashville, C. E. Cotterill, commerce attorney at Atlanta, Ga., and Edgar S. Barney, secretary and general passenger agent of the Hudson River Day Line. At a dinner in the evening, given by the Cincinnati Traffic Club, W. W. Atterbury, president of the Pennsylvania, T. R. Dahl, vice-president and secretary of the White Company, and C. W. Galloway, vice-president of the Baltimore & Ohio, will address the members. The second day of the meeting will be devoted to the regular business of the association.

Equipment and Supplies

Locomotives

THE UNION PACIFIC has ordered 25 three-cylinder 4-12-2 type locomotives and 20 extra locomotive tenders from the American Locomotive Company. Inquiry for this equipment was reported in the *Railway Age* of February 22.

THE EQUITABLE EQUIPMENT COMPANY, New Orleans, La., has ordered one 2-8-0 type locomotive for service in Honduras from the American Locomotive Company.

Freight Cars

THE NORTHERN PACIFIC is inquiring for 250 steel underframes for stock cars.

THE BETHLEHEM CHILI IRON MINES COMPANY is inquiring for five hopper bottom ore cars of 70 tons' capacity.

THE BUTLER COUNTY OIL REFINING COMPANY, Butler, Pa., is inquiring for 60 tank cars of 8,000 gal. capacity.

THE NEW YORK, NEW HAVEN & HARTFORD is inquiring for 15 coke cars of 40 tons' capacity.

THE SOUTH AFRICAN RAILWAYS have ordered 200 diamond frame bogie trucks from the American Car & Foundry Company.

THE MONESSEN SOUTHWESTERN has ordered ten steel gondola car bodies from the Koppel Industrial Car & Equipment Company.

THE TEXAS & PACIFIC has ordered 25 caboose car underframes from the Pullman Car & Manufacturing Corporation. Inquiry for this equipment was reported in the *Railway Age* of January 25.

THE NORTH AMERICAN CAR CORPORATION has ordered 75 insulated tank cars of 10,000 gal. capacity from the Pressed Steel Car Company. Inquiry for 50 cars was reported in the *Railway Age* of February 22.

THE ROCK ISLAND REFINING COMPANY, Duncan, Okla., has leased 200 tank cars from the General American Car Corporation. Inquiry for this equipment was reported in the *Railway Age* of February 15.

THE AMERICAN REFRIGERATOR TRANSIT COMPANY has ordered 800 standard refrigerator cars and 200 brine tank refrigerator cars from the Mt. Vernon Car Manufacturing Company. Inquiry for this equipment was reported in the *Railway Age* of February 8.

Passenger Cars

THE UNION PACIFIC is inquiring for two gas-electric rail motor cars and two trailers.

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS has ordered one combination baggage and mail gas-electric rail motor car from the J. G. Brill Company.

THE LONG ISLAND has ordered 25 multiple unit steel passenger cars from the Pressed Steel Car Company and 20 from the American Car & Foundry Company. In addition the railroad company has converted 40 steam cars to multiple unit cars.

THE CANADIAN NATIONAL has ordered from the Canadian Car & Foundry Company five dining cars, 12 lounge cars and 12 sleeping cars, each to have six sections, one chamberette, one drawing room and three compartments. Inquiry for this equipment was reported in the *Railway Age* of January 11.

THE GULF, MOBILE & NORTHERN has placed an order for four 73-ft. trailers for rail motor cars with the J. G. Brill Company; two of the trailers are of the all-passenger type, one of the observation type and one of the passenger and baggage type. This is in addition to two combination passenger and baggage gas-electric rail motor cars ordered from the same builder and reported in the *Railway Age* of March 1.

THE LOUISVILLE & NASHVILLE has ordered the following equipment:

No.	Type	Builder
4	passenger and baggage cars	American C. & F. Co.
4	vestibule coaches	American C. & F. Co.
2	baggage and mail cars	American C. & F. Co.
3	dining cars	American C. & F. Co.
10	baggage cars	Pressed Steel Car Co.

Inquiry for this equipment was reported in the *Railway Age* of February 22.

Iron and Steel

THE BOSTON & MAINE has ordered 2,000 tons of steel from the Phoenix Bridge Company for a bridge at Manchester, N. H.

Signaling

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company material for centralized traffic control to be installed between Limedale, Ind., and Ben Davis, 32 miles of single track. The operating machine is to be at Limedale. The system is to be superimposed on existing A.P.B. signaling now in operation.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS has ordered from the Union Switch & Signal Company 95 highway crossing signals, 42 illuminated stop signs and other material.

Miscellaneous

THE NEW YORK CENTRAL has given a contract to the General Electric Company for equipment to cost $2,000,000 to be used in the construction of substations and a circuit breaker house between Riverdale, N. Y., and West Seventy-second street in connection with its West Side electrification work.

Supply Trade

The Dwight Davis Lumber Company has moved its office to 333 North Michigan avenue, Chicago.

The **Track Specialties Company,** New York, will move its offices from 29 Broadway to the General Motors Building, 1775 Broadway, on April 1.

The **Wellman-Seaver-Morgan Company,** Cleveland, Ohio, has changed its name to the **Wellman Engineering Company.**

The Fansteel Products Company, Inc., has appointed the following sales representatives: **D. C. Wilson** at 54 Dey street, New York, and **J. Voigt, Jr.,** and **P. M. Etters** in the Harrison building, Philadelphia, Pa.

Albert E. Ferguson, general sales manager of the **National Lumber & Creosoting Company** has been elected vice-president and a member of directors. Mr. Ferguson will have headquarters at the general offices of the company at Texarkana, Ark.-Tex., and at St. Louis, Mo.

The Valspar Corporation, with headquarters at New York, has been organized to function as a holding company for the varied interests of **Valentine & Company** both in the United States and abroad; its officers will be the same as those of Valentine & Company. Through Valentine & Company, the Valspar Corporation owns a majority stock interest in the Cie. des Vernis Valentine, its French subsidiary, all the stock of the Con-Ferro Paint & Varnish Co., St. Louis, Mo., and a substantial stock interest in one English paint company. The company contemplates additions to this group of complementary units. The Valspar Corporation through subsidiaries owns three plants in the United States. An extension to the South Kearny, N. J., plant is contemplated.

F. H. Lovell & Co., Arlington, N. J., and the **Dressel Railway Lamp & Signal Co.** of the same city have been merged under the new corporate name of the **Lovell-Dressel Co., Inc.,** with general offices and plant at Arlington, N. J. As a result of this merger there will be embodied under one management the manufacture of a specialized lighting equipment used in practically every branch of transportation. **F. Hallett Lovell,** since 1913 president of F. H. Lovell & Co., is chairman of the board of the new organization. Mr. Lovell was a member of the original firm of F. H. Lovell & Co. before it was incorporated in 1903 and was also president of the Lovell-McConnell Manufacturing Co. **A. D. Hobbie,** president of the Dressel Railway Lamp & Signal Co. and vice-president and general manager of F. H. Lovell & Co., is president of the new company. Mr. Hobbie has been actively engaged in the

manufacture of lighting equipment and its branches for a number of years. **F. W. Dressel,** vice-president of the Dressel Railway Lamp & Signal Co. is vice-president of the Lovell-Dressel Co. Mr. Dressel has had many years experience as a lighting expert in signal and maintenance of way work. **J. C. Wylie,** vice-president of the Dressel Railway Lamp & Signal Co. and secretary of F. H. Lovell & Co. is vice-president of the Lovell-Dressel Co. Mr. Wylie in addition to his railroad experience is known in the marine field, having formerly been in the Navy Department at Washington. **R. C. Schatzman,** secretary of the Dressel Railway Lamp & Signal Co. and in charge of the auditing and accounting departments is secretary and treasurer of the Lovell-Dressel Co.

Leonard Perez, assistant tie and timber agent of the Missouri Pacific, has resigned to become district sales manager of the **National Lumber & Creosoting Company** in charge of sales in the St. Louis district, with headquarters in the Telephone building, St. Louis, Mo.

Leonard Perez

Prior to his service with the Missouri Pacific, Mr. Perez was engaged in various capacities with the Southern Pacific at New Orleans and the Pennsylvania at Pittsburgh. His several years experience with the Missouri Pacific was in the tie and timber department.

Obituary

Oliver B. Barrows, representative of the American Steel & Wire Company, with headquarters at St. Louis, Mo., died in that city on February 25, following a heart attack.

H. D. Hammond, vice-president of the American Steel Foundries, with headquarters at Chicago, died on March 1 of peritonitis following an operation for appendicitis. He was born in 1887, and during his early training spent four years in the offices of Robert Wetherill & Co., Corliss engine manufacturers at Chester, Pa., and one year with the Keystone Drop Forge Works at the same point, entering the service of the American Steel Foundries at the Thurlow, Pa., works in September, 1906. In March, 1910, he was transferred to the Pittsburgh, Pa., sales office and three years later he was appointed production engineer at the Indiana Harbor, Ind., works. Mr. Hammond was promoted to manager of railroad miscellaneous sales at Chicago in March, 1915,

H. D. Hammond

and in December, 1917, he was further advanced to general manager of miscellaneous sales, a position he held until his election as vice-president in charge of miscellaneous sales on March 21, 1929.

Trade Publication

RAILWAY SIGNAL ENGINEERING.—This is a pamphlet 6 in. x 9 in. which has been issued by the General Railway Signal Company, Rochester, N. Y., for the encouragement of "a young profession" for young electrical and mechanical engineers. The course of training which this company offers to a limited number of new students each year is described to the extent of four pages of text and six pages of illustrations. The remaining 15 pages of the pamphlet are devoted to brief descriptions of the company's plant and of typical installations of interlocking, block signaling, automatic train control and car retarders which have been made by this company.

THE CHICAGO & NORTH WESTERN has put on a new train, "The Victory," between Chicago and the Twin Cities running through in 10 hours 25 minutes; leave Chicago, 10:15 p.m. arrive Minneapolis, 8:40 a.m. Returning, leave Minneapolis 10:30 p.m. arrive Chicago at 9:45 a.m. Another train to be installed will be "The Advance" which will make stops between Chicago and Milwaukee and which will carry a Twin City sleeper. The Advance will leave Chicago at 10 p.m. and the sleeper will be transferred at Milwaukee to the North American, which will leave Chicago at 11:20 p.m. instead of 10 p.m. as at present.

Construction

CANADIAN NATIONAL.—Bids were closed on February 28 for the construction of an extension of the Canadian National Steamships dock at Vancouver, B. C., at a cost of $150,000.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—The board of directors has approved a budget of $15,000,000 to be expended for improvements to physical property during 1930. In addition to projects which have already been reported in *Railway Age,* the budget provides for the following major improvements expenditures: Grade separation, changes in Muskego yard and completion of the new car repair shop at Milwaukee, Wis., $1,588,000; track elevation and South Boulevard improvements at Evanston, Ill., and construction of a new commissary and laundry building at Chicago, $1,365,780; new enginehouse and engine terminal facilities at Sioux Falls, S. D., $126,300; new dock and warehouse facilities at Green Bay, Wis., $250,000; new depressed track near Government bridge over the Mississippi river at Davenport, Iowa, $145,500. Other general items of expenditure include improvements to bridges, trestles and culverts, $1,610,000; improvements to shops and enginehouses, $785,700; additional yard and passing tracks, $610,000; grade crossing eliminations, $529,000; fuel and water stations, $439,000; station facilities, $557,000.

CHICAGO, ROCK ISLAND & PACIFIC-WABASH.—Bids will be received by these companies and the St. Louis (Mo.) Board of Public Service until March 25 for grading and the installation of a drainage system for depression of tracks preparatory to the construction of a reinforced concrete viaduct to carry Lindell and Union boulevards, St. Louis over the two railroads in Forest Park.

GULF COAST LINES (St. Louis, Brownsville & Mexico).—A contract has been awarded to J. E. Walsh, Mission, Tex., for the construction of a one-story brick, tile and concrete passenger station at Donna, Tex.

ILLINOIS CENTRAL.—A contract for the rehabilitation of the Tennessee Terminal and Warehouse building on Front street, Memphis, Tenn., has been let to the Gauger-Korsmo Construction Company, Memphis, at a cost of about $75,000.

MISSOURI PACIFIC. — This company closed bids on March 3 for the construction of one-story concrete and stone passenger stations at Gray's Summit, Mo., Labadie and Boles. Each building will have outside dimensions of 18 ft. by 46 ft. A contract has been awarded to J. J. Wuellner & Sons, Alton, Ill., for the construction of a one-story brick and concrete freight station at Cape Girardeau, Mo. This structure will have dimensions of 16 ft. by 70 ft.

MISSOURI PACIFIC-TERMINAL RAILROAD ASSOCIATION.—These companies plan the rehabilitation of the viaduct crossing Mill Creek valley and their tracks at Twenty-first street, St. Louis, Mo., at a cost of about $50,000. The bridge has been closed to street traffic for 18 months and its repair will require the replacement of fabricated steel and the encasement of all steel members in concrete for protection from locomotive smoke.

NEW YORK CENTRAL.—The Public Service Commission of New York has ordered the elimination of the Shawnee road crossing of this company's tracks west of Cambria, N. Y., by carrying the roadway over the tracks. The cost is estimated at $120,000.

NORTHERN PACIFIC-UNION PACIFIC.—It is expected that bids will be received before April 1 by the Northern Pacific for the construction of the joint line in the Olympic peninsula from Moclips, Wash., north to the Hoh river, 60 miles. Two contracts will be awarded, one for the construction of four reinforced concrete bridges, and the other to include clearing of the right of way, grading, track laying and trestle work. The Northern Pacific will salvage all timber cut from the right of way.

PENNSYLVANIA.—A contract has been awarded to the T. J. Foley Construction Company, Pittsburgh, Pa., for the enlargement of the receiving yard at Bay Junction, Sandusky, Ohio, at a total cost of about $274,000. This contract covers grading, track laying and bridge work for eight additional tracks which will increase the number of tracks in the yard from 111 to 119 while the capacity of the yard will be increased from 5,517 to 6,277 cars. The capacity of the receiving portion of the yard will be increased from 714 to 1,474 cars.

PENNSYLVANIA.—A contract has been awarded to J. Rich Steers, Inc., New York, for the removal of old piers in connection with the construction of new piers E and F at Jersey City, N. J., at an approximate cost of $315,000. This work is part of the construction in connection with the new rail-water terminal which the Pennsylvania is now building at Jersey City. Contracts have also been let to the Federal Erectors, Inc., Philadelphia, Pa., for the erection of a freight car transfer bridge in the South Philadelphia terminal yard, Philadelphia, at a cost of approximately $83,000, and to Sinclair & Grigg, Philadelphia, for the building of a ten-stall extension to the enginehouse at the South Philadelphia terminal yard. The cost of this latter project is estimated at $57,000.

ST. LOUIS-SAN FRANCISCO. — It is planned to ask for bids in the near future for the construction of a four track structure to carry this company's tracks over Southwest avenue at Ivanhoe avenue, St. Louis, Mo. The cost of the project, $56,320 of which will be borne by the city of St. Louis, will be about $128,760.

Railway Finance

BALTIMORE & OHIO.—*Conditions as to B. R. & P. Accepted.*—President Daniel Willard notified the Interstate Commerce Commission on February 26 that the directors had voted to agree to comply with the conditions imposed by the commission in connection with its authorization of the acquisition of control of the Buffalo, Rochester & Pittsburgh. The order specified that it should become effective upon the filing of such notice of agreement to maintain existing gateways, to keep open for six months the offer to purchase minority stock at the price paid for the majority, to keep separate accounts for the B. R. & P. and to abide by findings which the commission may make as to the inclusion of the Mt. Jewett, Kinzua & Riterville.

Unification Application Dismissed.—The commission has formally dismissed the application filed last year under paragraph 2 of section 5 for authority to acquire control of a number of roads in eastern territory in accordance with the four-system plan.

Proposed Acquisition of B. & S.—The Baltimore & Ohio has filed a brief in support of its application for authority to acquire control of the Buffalo & Susquehanna, which it proposes to use in part in building up the proposed shorter route between Chicago and New York. With reference to the use of the Reading as part of the route the brief points out that the earlier understandings with reference to equal holdings of Reading stock with the New York Central are no longer in existence and the Baltimore & Ohio has in the past year increased its holdings from 25 to 34 per cent in the Reading. The Delaware & Hudson has filed a brief in opposition.

BUFFALO, ROCHESTER & PITTSBURGH.—*Annual Report.*—See summary published as an advertisement on adjacent pages.

CANADIAN PACIFIC.—*Acquisition of Algoma Eastern.*—Negotiations are almost complete for the purchase, on a cash basis, of the Algoma Eastern Railway by the Canadian Pacific Railway, according to E. W. Beatty, president of the C.P.R. An announcement of full details was expected to be made in a few weeks, he said.

By acquiring the other railway, 88 miles will be added to the total mileage of the C.P.R., he said, and will provide facilities for the C.P.R. to carry coal and other products into the Sudbury area, and the products of the nickel mines to outside markets.

"We have been negotiating for some time," he said. "Matters have turned out very satisfactory, and I think this proposed purchase will be confirmed at our annual meeting in May.

"The main reason for buying it will be because it can be more efficiently operated as a subsidiary of our lines, and we may be able to serve the nickel areas more efficiently."

Commenting on the appointment of R. T. Stanley, president of the International Nickel Company, to the directorate of the C.P.R., Mr. Beatty said, "Mr. Stanley is a man of outstanding ability. For some years there has been a close business connection between our company and International Nickel, and the Consolidated Smelting, a subsidiary of ours, and Nickel are connected in spots."

He announced the new C.P.R. hotels at Yarmouth and Kemptville, N.S., would probably be completed this year.

Mr. Beatty said they were still looking for a hotel site in the west end of London, Eng., and he hoped that something would be accomplished when he went to England in June for the launching of "our greatest ship, the Empress of Britain."

CLEVELAND UNION TERMINALS. — *Supreme Court to Review Station Controversy.*—The Supreme Court of the United States on March 3 announced its intention of reviewing the decision of the district court for the northern district of Ohio in the case in which the Pittsburgh & West Virginia, as a stockholder in the Wheeling & Lake Erie, had sought to prevent that company from abandoning its Ontario street station and using the facilities of the Cleveland Terminals Company.

ERIE.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue and hold in the treasury pending sale on favorable terms $50,000,000 of refunding and improvement mortgage bonds, series of 1930, and to issue and deposit permanently with the trustee under its refunding and improvement mortgage $29,071,750 of general lien 4 per cent bonds.

GREAT NORTHERN PACIFIC.—*Resolution to Forbid Unification.*—Senator Dill, of Washington, has introduced in Congress a joint resolution directing the Interstate Commerce Commission to forbid consolidation of the Great Northern and Northern Pacific and "to maintain the competition in railroad service between said companies as at present exists." The resolution states that such "consolidation" would be in defiance of a decision of the Supreme Court, "will bring about a reduction of railroad service in those states served by said railroads and cause more unemployment than already exists, and will compel many railroad employees to lose their positions or be compelled to remove their residences to other cities, at severe financial loss."

JACKSONVILLE, GAINSVILLE & GULF.—*Abandonment.*—The Interstate Commerce Commission has authorized this road to abandon a section of its line extending from North Gainsville to Samson City, Fla., 18 miles.

LOUISIANA & ARKANSAS.—*Securities.*—This company has been authorized by the Interstate Commerce Commission to

(*Continued on page 624*)

Annual Reports

Synopsis of Annual Report, Reading Company, Calendar Year 1929

PHILADELPHIA, PA., February 27, 1930

To the Stockholders of Reading Company:

The Board of Directors submits herewith its 32nd Annual Report.

The income for the year ended December 31, 1929, was as follows:

	1929
Railway Operating Revenues	$97,196,954.76
Railway Operating Expenses	75,929,795.43
Net Revenue from Railway Operations	$21,267,159.33
Railway Tax Accruals	$4,439,920.86
Uncollectible Railway Revenues	2,928.01
Total Taxes and Uncollectible Railway Revenues	$4,442,848.87
Total Railway Operating Income	$16,824,310.46
Nonoperating Income	372,210.85
Net Railway Operating Income	$17,196,521.31
Other Nonoperating Income	6,953,343.19
Gross Income	$24,149,864.50
Deductions from Gross Income	8,641,123.85
Net Income	$15,508,740.65
Income Appropriated for Sinking Fund and Reserve Funds	$54,719.65
Income Appropriated for Investment in Physical Property	8,895,818.83
Total Appropriations of Income	$8,950,538.48
Income Balance Transferred to Profit and Loss	$6,558,202.17

North Broad Street Station, Philadelphia

On September 30, 1929, Reading Company's latest contribution to the convenience, prosperity and general welfare of the people of Philadelphia, in the form of the handsome and commodious passenger station located at Broad and Huntingdon Streets, was opened to the public.

Hon. Andrew W. Mellon, Secretary of the Treasury of the United States, was the principal guest and speaker on the occasion.

This new station, constructed entirely of Indiana limestone and containing such features as parking space, restaurant and baggage facilities for the Company's patrons, cost approximately $2,000,000. It was erected on the site of the former Huntingdon Street Station, and is served by all of the Company's express and local trains entering or leaving Philadelphia.

Elimination of Grade Crossings

Substantial progress was made during 1929 on the elimination of grade crossings through Wissahickon and Manayunk, Philadelphia, on the Norristown Branch. This work is approximately 80% completed. The grade crossings at Roxborough Avenue and Green Lane were vacated prior to the close of the year. It is anticipated that operation on the high level tracks will be commenced during the summer of 1930.

Plans and specifications for the elimination of the crossings on the Chestnut Hill Branch, mentioned in the 1928 annual report, were in course of preparation at the close of the year 1929, and it is anticipated that work on the elimination of the crossings at Mermaid Lane and Willow Grove Avenue will be commenced early in 1930, following the completion of which work will be undertaken at the Armat Street, Chelten Avenue and Baynton Street crossings.

The grade crossing at DeKalb Street, Bridgeport, also mentioned in the 1928 annual report, was eliminated during the year, the new highway bridge over the tracks having been opened to traffic on July 30, 1929.

Work was also undertaken during the year on the elimination of grade crossings at Winterthur, Del., North Glenside, Pa., and Westwood, Pa., the latter two by direction of the Public Service Commission of Pennsylvania.

Electrification

Construction work was started early in 1929 on the electrification of suburban lines to Lansdale, Hatboro, Langhorne, and Chestnut Hill, authorized by the Board of Directors, October 25, 1928. The work done during the year has included a large number of concrete foundations for the bridges which will support the overhead wires and also the signals. In addition, a number of these bridges have been erected so that the colorlight signals could be installed in advance of stringing the wires.

Plans and specifications have been prepared so as to place orders for the principal electrical car and substation equipment early in 1930. The erection of the overhead wires will be started in the spring of 1930.

A car shop for the inspection and repairing of the electrical equipment was 80% complete at the end of 1929, and will be ready for occupancy in the spring of 1930, when it is to be used temporarily for a storehouse for electrification material.

Concurrently with the electrification work, changes are being made at various points to provide additional clearances required. A twenty year power contract was negotiated with the Philadelphia Electric Company for the supply of power for all electric trains and also for heating of the electric cars and operation of the colorlight signals.

Progress on the whole electrification project is up to schedule.

Equipment

Reading Company received and placed in service during the year 1929 all of the equipment mentioned in the 1928 report for which contracts had been awarded, together with the following additional units:

200 70-ton capacity steel gondola cars, 61 feet long,
1 Erecting car, required in connection with electrification,
1 Trailer, and
2 Locomotive cranes

and entered into contracts for the delivery during 1930 of the following equipment:

4 10-car capacity steel carfloats,
2 8-car capacity steel carfloats, and
20 Steel caboose cars.

Expenditures were also made during the year on the installation of syphons on thirteen locomotives; for the conversion of six steel passenger coaches into club cars and the purchase and alteration of seven additional coaches for club and parlor car service on the Atlantic City Railroad; for increasing the tank capacity of a number of locomotives, and for labor-saving appliances, such as air compressors and track machines, for the Maintenance of Way Department.

Equipment Trust Obligations

At the close of the fiscal year ended December 31, 1929, there were outstanding Equipment Trust obligations to the extent of $11,815,000. These obligations were as follows:

Series	Outstanding Dec. 31, 1928	Payments During Year	Outstanding Dec. 31, 1929
H	$380,000	$190,000	$190,000
I	2,400,000	600,000	1,800,000
J	3,330,000	830,000	2,500,000
K	4,000,000	800,000	3,200,000
L	4,875,000	750,000	4,125,000
	$14,985,000	$3,170,000	$11,815,000

Of the $11,815,000 Equipment Trust Certificates outstanding December 31, 1929, $9,133,000 were owned by Reading Company, and $131,000 by subsidiary companies.

Federal Valuation of Railroads

The cost to the Reading System for the continuance during the year of the physical valuation of its property was $118,909.32, and the total expenditure incurred to December 31, 1929, on account of Federal Valuation under Act of Congress approved March 1, 1913, was $1,452,133.91.

Although the last brief was filed on April 27, 1928, upon the Company's protest against the Interstate Commerce Commission's tentative valuation of the property of the Reading System, the Commission's report of "final value" as of June 30, 1917, has not yet been received.

During the year, progress has been made in compiling the very detailed reports required by the Interstate Commerce Commission for the purpose of bringing the valuation up to December 31, 1927.

Segregation

During the year 1929 the holders of $37,000 additional General Mortgage 4% bonds on Reading Company and The

Philadelphia and Reading Coal and Iron Company presented their bonds to the Central Hanover Bank and Trust Company, New York City, for exchange or redemption in accordance with the order of the United States District Court, thus leaving outstanding on December 31, 1929, $163,000 of said issue of bonds. As previously reported, the mortgage which formerly secured this issue of bonds was cancelled and satisfied of record, and sufficient United States Fourth Liberty Loan bonds were deposited with the Trust Company to provide for interest on the General Mortgage Bonds and for their ultimate redemption.

The holders of Certificates of Interest in 250 shares of The Philadelphia and Reading Coal and Iron Corporation presented their Certificates to the Wilmington Trust Company, Wilmington, Delaware, for redemption at $29.50 per share, during the year 1929, in accordance with the order of the United States District Court, reference to which was made in the 1928 Annual Report. Certificates of Interest in 387 shares of the Coal Corporation remained outstanding and unredeemed on December 31, 1929.

Profit and Loss Account

For Year Ended December 31, 1929

Account	Dr.	Cr.
Credit balance December 31, 1928		$11,245,366.08
Balance transferred from income for the year ended December 31, 1929		6,558,202.17
Profit on road and equipment sold		665,514.43
Unrefundable overcharges		20,192.08
Donations for construction of sidings		26,754.75
Miscellaneous credits		1,533,835.57
Dividend appropriations of surplus	$8,397,602.00	
Surplus appropriated for investment in physical property	26,754.75	
Debt discount extinguished through surplus	250.00	
Loss on retired road and equipment	342,229.43	
Miscellaneous debits	1,821,174.32	
Credit balance December 31, 1929	9,461,854.58	
Total	$20,049,865.08	$20,049,865.08

Atlantic City Railroad Company

Atlantic City Railroad Company's issue of First Mortgage 5½% bonds dated May 1, 1889, matured on May 1, 1929. The Interstate Commerce Commission, in Finance Docket No. 7504, authorized the Railroad Company to extend this issue of bonds to May 1, 1954, with interest reduced to 5%. Both principal and interest continue to be guaranteed by Reading Company.

Reading Transportation Company

In addition to the motor coach routes mentioned in the 1928 annual report, with a total mileage of 228.8, as being in operation at the close of the year 1928, the Reading Transportation Company commenced operations on the following routes during 1929.

Harrisburg, Pa., to New York City	184.6 miles
Philadelphia to Pottsville, Pa	90.9 "
Lebanon to Pine Grove, Pa	26.3 "
Philadelphia, Pa., to Atlantic City, N. J	62.0 "
Total	363.8 "
Total route mileage in operation	592.6

The Harrisburg-New York route is operated in conjunction with the Jersey Central Transportation Company.

The Reading Transportation Company had in operation at the close of 1929, 52 motor coaches, and carried during the year 880,375 passengers.

$700,000 of the authorized $1,000,000 capital stock has been issued to date, and is owned by Reading Company.

The service performed by the Reading Transportation Company continues to be economical and satisfactory.

After depreciation of its equipment in accordance with the best modern practice, and the payment of all other charges,

GENERAL BALANCE SHEET—ASSETS

December 31, 1929

INVESTMENTS:			
Investment in road and equipment			$300,794,869.62
Improvements on leased railway property			34,596,326.68
Deposits in lieu of mortgaged property sold:			
Cash		$1,022.44	
Securities	$2,447,704.23		
Less Company's securities	1,685,600.00	762,104.23	763,126.67
Miscellaneous physical property			12,625,266.44
			$348,779,589.41
INVESTMENTS IN AFFILIATED COMPANIES:			
Stocks			$23,030,823.36
Bonds			14,540,214.32
Advances			8,365,466.72
			$45,936,504.40
OTHER INVESTMENTS:			
Stocks			$27,925,560.67
Bonds			11,680,757.68
Notes			7,182.00
Advances			117,992.28
Miscellaneous			291,372.56
			$40,022,865.19
Total Investments			$434,738,959.00
CURRENT ASSETS:			
Cash			$2,874,869.85
Special deposits			37,699.57
Loans and bills receivable			2,317,637.43
Traffic and car-service balances receivable			1,090,662.95
Net balance receivable from agents and conductors			2,212,157.63
Miscellaneous accounts receivable			1,854,309.26
Material and supplies			8,693,193.13
Interest and dividends receivable			961,002.71
Total Current Assets			$20,041,532.53
DEFERRED ASSETS:			
Working fund advances			$52,488.70
Insurance and other funds	$1,080,319.01		
Less company's securities	411,000.00		669,319.01
Other deferred assets			104,628.10
Total Deferred Assets			$826,435.81
UNADJUSTED DEBITS:			
Rents and insurance premiums paid in advance			$98,135.97
Other unadjusted debits			903,996.74
Total Unadjusted Debits			$1,002,132.71
Securities issued or assumed—unpledged	$13,689,883.34		
Securities issued or assumed—pledged	1,448,000.00		
Grand Total			$456,609,060.05

GENERAL BALANCE SHEET—LIABILITIES

December 31, 1929

	Book Liability	Held by or for Company	
STOCK:			
First preferred	$28,000,000.00	$8,800.00	$27,991,200.00
Second preferred	42,000,000.00	29,350.00	41,970,650.00
Common	70,000,000.00	10,900.00	69,989,100.00
Total Stock	$140,000,000.00	$49,050.00	$139,950,950.00
LONG-TERM DEBT:			
Funded debt secured by mortgage	$97,320,304.76	$6,442,433.34	$90,877,871.42
Funded debt secured by stock collateral	24,295,000.00	1,610,000.00	22,685,000.00
Equipment trust obligations	11,815,000.00	9,133,000.00	2,682,000.00
Total Funded Debt Unmatured	$133,430,304.76	$17,185,433.34	$116,244,871.42
Nonnegotiable debt to affiliated companies			320,040.50
Total Long-Term Debt			$116,564,911.92
CURRENT LIABILITIES:			
Traffic and car-service balances payable			$2,234,807.70
Audited accounts and wages payable			7,349,487.56
Miscellaneous accounts payable			50,871.43
Interest matured unpaid			1,475,051.32
Dividends matured unpaid			58,685.50
Funded debt matured unpaid			57,888.90
Unmatured dividends declared			1,819,488.50
Unmatured interest accrued			588,295.21
Unmatured rents accrued			325,661.37
Other current liabilities			43,980.16
Total Current Liabilities			$14,004,217.65
DEFERRED LIABILITIES:			
Other deferred liabilities			$604,651.77
UNADJUSTED CREDITS:			
Tax liability			$6,080,592.26
Insurance and casualty reserves			1,016,891.80
Accrued depreciation—Road			8,180,762.58
Accrued depreciation—Equipment			55,570,679.93
Other unadjusted credits			532,634.98
Total Unadjusted Credits			$71,381,561.55
CORPORATE SURPLUS:			
Additions to property through income and surplus			$102,902,812.58
Funded debt retired through income and surplus			1,738,000.00
Total Appropriated Surplus			$104,640,912.58
Profit and loss credit balance			$9,461,854.58
Total Corporate Surplus			$114,102,767.16
GRAND TOTAL			$456,609,060.05

the Reading Transportation Company showed a net profit from its operations for the year 1929. In addition thereto, considerable savings were effected by Reading Company through the withdrawal of unprofitable train service on some of its outlying branches and the substitution of motor coach service therefor commensurate with the necessities of the travelling public.

Operation of Subsidiary Companies

The operating contracts with the twelve subsidiary railroad companies of Reading Company, referred to in the 1928 annual report, became effective January 1, 1929, and the earnings derived from the operation of those properties as well as the costs of operation, interest, taxes, etc., are included in the operating results of Reading Company for the year.

For comparative purposes a restatement has been made of the 1928 data in the financial and miscellaneous statements which are appended to this report.

Funded Obligations

Changes occurred in the funded obligations of the Company during the year 1929 as follows:

Mortgage and Collateral Trust Bonds outstanding December 31, 1928		$113,997,638.09
General and Refunding Mortgage 4½% Bonds issued, account similar amount of General Mortgage 4's surrendered		2,000.00
		$113,999,638.09
Real Estate Mortgages paid off during year	$8,000.00	
Reading Company's proportion of joint General Mortgage 4% bonds of Reading Company and The Philadelphia and Reading Coal and Iron Company surrendered for exchange or redemption under Plan of Segregation	13,000.00	
Securities issued or assumed by Reading Company, acquired during year and placed in treasury	415,766.67	436,766.67
On December 31, 1929, bonds outstanding were		$113,562,871.42

Due acknowledgement is made of the loyal and efficient services rendered by the officers and employees of the Company during the past year.

By order of the Board of Directors.

AGNEW T. DICE,
President.

Forty-Fifth Annual Report of the Buffalo, Rochester & Pittsburgh Railway Company, for Year Ended December 31st, 1929

The Directors of the Buffalo, Rochester and Pittsburgh Railway Company submit to the stockholders the following report for the year ended December 31, 1929.

Road Operated

	1929 Miles	1928 Miles	Increase	Decrease
Owned	369.71	369.71		
Leased	102.13	102.25		.12
Trackage rights	130.13	130.01	.12	
Total length of road operated	601.97	601.97		
Second track	211.88	211.88		
Sidings	471.44	458.82	12.62	
	1,285.29	1,272.67	12.62	

There was no change in the mileage of road operated. Sidings increased 12.62 miles, due to the lease and operation as yard movement of the Reynoldsville and Falls Creek Railroad Company's 16.06 miles of track; less a net decrease in other sidings of 3.44 miles.

Income

	1929	1928	Increase	Decrease
Operating Income:				
Revenues	$17,811,818.35	$16,966,503.60	$845,314.75	
Expenses	14,577,099.57	13,848,358.81	728,740.76	
Net revenue	$3,234,718.78	$3,118,144.79	$116,573.99	
Tax accruals	$600,000.00	$500,000.00	$100,000.00	
Uncollectible revenues	1,580.02	1,433.87	146.15	
	$601,580.02	$501,433.87	$100,146.15	
Total operating income	$2,633,138.76	$2,616,710.92	$16,427.84	
Non-operating income	938,622.45	807,411.92	131,210.53	
Gross income	$3,571,761.21	$3,424,122.84	$147,638.37	
Deductions for interest, rentals, etc.	2,563,062.78	2,565,650.06		$2,587.28
Net income—surplus available for dividends	$1,008,698.43	$858,472.78	$150,225.65	
Return on capital stock	6.11%	5.20%	.91%	

The net income of $1,008,698.43, equal to 6.11 per cent. on both classes of stock, shows an increase of $150,225.65 compared with the preceding year.

Dividends

Dividends, out of the accumulated surplus in Profit and Loss Account, were paid in cash on:

			1929		1928
Preferred stock	$6,000,000	6%	$360,000	6%	$360,000
Common stock	10,500,000	4%	420,000	4%	420,000
Total	$16,500,000		$780,000		$780,000

Since the close of the fiscal year your Board of Directors has declared a semi-annual dividend of three per cent on the preferred stock and two per cent on the common stock, payable February 15th, 1930.

Capital Stock

There has been no change during the year in this account. The total outstanding capital stock of the Company amounts to $16,500,000, and consists of $6,000,000 preferred stock and of $10,500,000 common stock.

Funded Debt

The following bonds were retired during the year:

Equipment agreement Series G	$121,000	
" H	250,000	
" J	100,000	
" K	80,000	
" L	128,000	
" 10	133,600	
Total		$812,600

With the approval of all governmental authorities and in accordance with the provisions of the Consolidated Mortgage of 1907, the trustee delivered to the Company during the year $756,000 Consolidated 4½% mortgage bonds, which were all placed in the Treasury.

The net result is a decrease of $812,600 in the funded debt of your Company.

Cost of Road

Capital account was charged during the year with $470,711.85 for investment in road, as follows:

Elimination of grade crossing, Wheatland, N. Y.	$3,225.08
Elimination of grade crossing, Pearl Creek, N. Y.	5,308.47
Elimination of grade crossing, Orchard Park, N. Y.	58,043.74
Elimination of grade crossing, Jewettville, N. Y.	10,872.37
Additional sidings, East Concord, N. Y.	20,467.15
Additional sidings, Hoyts, N. Y.	14,553.73
Additional sidings, Falls Creek, Pa.	6,903.77
Additional sidings, McIntyre, Pa.	16,252.98
Additional sidings at other points	15,036.66
Yard tracks, Johnsonburg, Pa.	17,796.78
Automatic flash light signals, various points	4,913.49
Improving culverts, bridges and roadway drainage	56,472.97
Protecting bank, East Concord, N. Y.	13,573.64
Purchase of coal under right of way to protect surface, Juneau, Pa.	15,469.73
Increased weight of rail	86,135.83
Increased ballast	31,757.75
Purchase of office building, Punxsutawney, Pa.	40,051.01
Miscellaneous	53,876.70
Total	$470,711.85

Approximately $119,817.40 additional expenditures for work authorized will be required to complete all the construction undertaken during the year.

Cost of Equipment

Expenditures were made for additions to equipment as follows:

Twelve miscellaneous equipment cars purchased	$13,208.47
Sundry betterments, including reclassification of sixty-six freight cars and one passenger car	92,523.72
	$105,732.19

There was credited for equipment sold, transferred or destroyed, the following book values:

Five locomotives	$87,416.92	
Two passenger train cars	9,490.08	
Nine hundred thirty-two freight train cars	762,228.05	
Thirty company's service cars	30,279.21	
Twelve miscellaneous equipment cars	12,559.44	901,973.70
Making a net credit of		$796,241.51

Seven hundred ninety-eight freight cars and twelve miscellaneous equipment cars were sold.

The rolling stock statistics are affected as follows:

The total tractive power of engines now aggregates 14,018,618 pounds, a decrease of 98,122 pounds during the year.

The average tractive power of each engine increased 576 pounds, being 51,539 pounds as against 50,963 pounds a year ago.

The total carrying capacity of cars in freight service now amounts to 523,320 net tons, a decrease of 42,545 net tons.

The average carrying capacity or efficiency of each freight car increased .45 net tons, being 47.30 tons as against 46.85 tons last year.

Of the cars in passenger service 62.5 per cent are of all steel construction, and in the freight service 99.7 per cent of the cars are all steel, or are equipped with steel underframes.

The following table indicates the relative changes in equipment for the past ten years:

	Tractive power of engines in pounds		Capacity of cars in freight service in tons of 2000 pounds	
	Average of each engine	Aggregate tractive power	Average of each car	Aggregate capacity
1920	45,630	14,281,845	44.12	748,215
1921	46,400	13,688,103	44.20	737,255
1922	46,630	13,522,696	44.37	727,382
1923	49,700	14,810,676	44.63	705,525
1924	49,886	14,716,267	44.91	692,450
1925	49,958	14,637,809	44.96	681,690
1926	50,143	14,541,582	45.52	637,922
1927	50,544	14,354,579	46.32	604,428
1928	50,963	14,116,740	46.85	565,865
1929	51,539	14,018,618	47.30	523,320
Increase over 1920	5,909	*263,227	3.18	*224,895
Per cent	12.95	*1.84	7.21	*30.06

* Decrease.

Leased Lines

The following advances were made this year for additions and betterments to leased lines:

	Allegheny & Western Railway	Clearfield & Mahoning Railway	Mahoning Valley Railroad	Reynoldsville & Falls Creek Railroad	Total
Improvements	$71,294.65	$11,960.29	$780.45	$4,327.68	$88,363.08
Less retirements	122,875.69	341.50	.....	.....	123,217.19
Cr.	$51,581.03	$11,618.79	$780.45	$4,327.68	$34,854.11
Less cash received	58,553.00	.....	.....	.....	58,553.00
Net Debit		$11,618.79	$780.45	$4,327.68	
Net Credit	$110,134.03				$93,407.11

The total net debit to date for advances to leased lines is as follows:

Allegheny & Western Railway	$450,499.30	
Clearfield & Mahoning Railway	438,258.70	
Reynoldsville & Falls Creek Railroad	4,327.68	
	$893,085.68	
Less Mahoning Valley Railroad	183,025.31	
Total net advances		$710,060.37

Passenger Revenue

The gross passenger revenue amounted to $850,823.03, a decrease of $69,441.19 or 7.55 per cent compared with 1928. The continued diversion of traffic to motor coaches and privately owned automobiles was the chief factor contributing to this unfavorable result.

The average rate received per passenger per mile decreased .001 cent, being 2.952 cents as compared with 2.953 cents the preceding year.

The average distance each passenger was carried increased 1.3 mile, being 38.0 miles against 36.7 miles.

Passengers carried in 1929	741,503	
Passengers carried in 1928	848,386	
A decrease of 12.60 per cent., or		106,883
Passengers carried one mile in 1929	28,819,547	
Passengers carried one mile in 1928	31,166,188	
A decrease of 7.53 per cent., or		2,346,641

Freight Revenue

The gross freight revenue amounted to $16,287,563.74, an increase of 5.35 per cent., or $827,638.20 compared with 1928.

The average rate received per ton mile decreased .021 cent, being .843 cent compared with .864 cent for the same period in 1928.

The average distance each ton was hauled increased 1.06 mile, being 159.01 miles, against 157.95 miles last year.

The revenue tonnage moved was as follows:

	1929	1928	Increase
Bituminous coal	6,347,427	6,202,407	145,020
Coke	318,702	150,493	168,209
Iron ore	175,168	24,279	150,889
Pig iron	217,391	58,469	158,922
Other freight	5,089,246	4,893,467	195,779
Total	12,147,934	11,329,115	
An increase of 7.23 per cent., or			818,819
Tons moved one mile in 1929			1,931,631,593
Tons moved one mile in 1928			1,789,444,512
An increase of 7.95 per cent., or			142,187,081

The average number of revenue tons carried one mile per revenue freight train mile increased 74.74 tons, being 884.30 tons against 809.56 tons a year ago.

The averages for the past ten years are as follows:

	Train load	Engine load
1920	943	602
1921	754	520
1922	790	534
1923	850	554
1924	736	515
1925	756	523
1926	824	555
1927	779	535
1928	810	542
1929	884	576

The non-revenue freight traffic, not included in any other figures of this report, is as follows:

	1929	1928
Number of tons	972,132	895,185
Number of tons carried one mile	90,651,755	83,153,922

Operating Expenses

Operating expenses increased $728,740.76 or 5.26 per cent, as follows:

	Increase	Decrease	Per cent.
Maintenance of way and structures	$166,627.15		7.8
Maintenance of equipment	506,105.53		11.5
Traffic	51,986.39		14.4
Transportation	.....	$22,000.87	0.3
Miscellaneous operations	245.15		0.8
General	23,756.24		4.7
Transp. for Inv.—Cr.	2,021.17		10.6
Total	$728,740.76		5.3

The increase in operating expenses is due principally to a larger maintenance program, resulting in greater expenditures for maintenance of roadway and repairs to rolling stock.

The percentage of each group of operating expenses to operating revenues, for the past seven years, is as follows:

	1929	1928	1927	1926	1925	1924	1923
Maintenance of way and structures	12.94	12.59	13.00	12.25	12.68	10.74	17.77
Maintenance of equipment	27.62	26.01	32.24	28.52	27.34	29.36	32.14
Traffic	2.31	2.12	2.04	1.86	1.97	1.93	1.40
Transportation	35.93	37.85	38.02	34.99	37.62	39.12	38.29
Miscellaneous operations	.17	.18	.18	.16	.18	.18	.15
General	2.97	2.98	3.04	2.93	2.98	3.07	2.33
Transp. for Inv.—Cr.	.10	.11	.14	.10	.10	.08	.48
	81.84	81.62	88.38	80.61	82.67	84.32	91.60

The average cost per ton mile is .648 cent, a decrease of .011 cent compared with last year.

Pensions

The pension system was inaugurated on July 1, 1903. At present the total number of pensioners on the rolls is 144, and the pensions paid during the year amounted to $99,481.22, an increase of 8 pensioners, and an increase of $10,158.84 in the payment made, compared with 1928.

The statistics for the past five years are as follows:

	1929	1928	1927	1926	1925
Total number enrolled	336	316	287	270	250
Number deceased or discontinued	192	180	165	147	132
Number on roll	144	136	122	123	118
Amount paid	$99,481.22	$89,322.38	$82,624.93	$78,601.57	$76,962.04

General Remarks

Under date of June 8, 1929, the Baltimore and Ohio Railroad Company made application to the Interstate Commerce Commission for authority to purchase a majority of the capital stock of your Company. A hearing was held July 24, 1929, before

Assistant Director Burnside of the Division of Finance, whose report favoring the application, subject to certain conditions, was issued October 2, 1929. Oral argument was made before the Commission January 17, 1930, and decision rendered in favor of the applicant February 11, 1930.

As stated in previous annual reports, your Company protested the tentative valuation of $59,422,709 placed on its property by the Interstate Commerce Commission as of June 30, 1917. Proof of the inadequacy of this amount was submitted, but no further announcement has been made by the Commission. The cost of valuation work to date is $415,934.51, of which $69,005.20 was assumed by the U. S. Railroad Administration.

The Ontario Car Ferry Company, Ltd., declared a dividend of 20% out of its earnings for the year ended December 31, 1928. The $50,000 received on the Ferry Company's stock owned by your Company was credited to Non-operating Income.

Operation of the Reynoldsville and Falls Creek Railroad, 16.06 miles of main and side tracks, connecting with your road at Falls Creek, Pa., was assumed by your Company June 24, 1929, under lease.

Retroactive mail earnings of $83,810.20 for the period May 9, 1925, to July 31, 1928, were received from the Government and credited to Mail Revenue.

At the annual meeting of stockholders May 20, 1929, Mr. Frank F. Henry and Mr. Charles T. O'Neal were elected Directors to succeed Mr. Ernest Iselin and to fill a vacancy in the Board.

The acknowledgments of the Board are renewed to its officers and loyal employees for their faithful and efficient service.

By order of the Board,

WILLIAM T. NOONAN,
President.

Rochester, N. Y., February 18, 1930.

Financial News

(*Continued from page 619*)

issue $4,000,000 of first mortgage 5 per cent bonds in exchange for a like amount of second mortgage 5½ per cent bonds and to re-classify 100,000 shares of 6 per cent preferred stock into 60,000 shares of 6 per cent cumulative prior preferred stock and 40,000 shares of 5 per cent preferred.

MAINE CENTRAL.—*Dividend Increased.*—This company has increased its annual common dividend rate from $4 to $5. Dividends were suspended in 1920, prior to which time the stock had been on a $6 basis. Payments were resumed in May, 1926, with a special dividend of $1 and in October, 1926, another $1 dividend was declared. In 1927 the stock was placed on a regular $4 per annum basis.

MISSOURI PACIFIC.—*Unification Case Argued.*—Oral arguments were presented before the Interstate Commerce Commission on February 28 on this company's application for authority to acquire control by lease of 22 subsidiary companies, not including the Texas & Pacific. The plan was represented by C. A. de Gersdorff, counsel for the Missouri Pacific, as a measure of administrative economy, which he said would effect savings of $1,000,000 a year in the operation of the lines. In reply to questions by members of the commission he said the plan is a step toward consolidation but that unification by lease is as far as the company can go at this time and that the Texas & Pacific was not included because the Missouri Pacific has not yet obtained enough of its stock to draw up a plan which would be entirely satisfactory to the stockholders. Commissioners Eastman and Lewis asked if the Missouri Pacific is prepared to follow out the allocations to its system under the consolidation plan, which groups the Denver & Rio Grande Western and Western Pacific with the Missouri Pacific system, but Mr. de Gersdorff said the road is not yet in a position to take over those lines. He pointed out also that the plan had not been promulgated when the application was filed and the hearing held on it. The commission denied a petition of the Illinois Central and Yazoo & Mississippi Valley to intervene in the case.

PENNSYLVANIA.—*Lease of W. J. & S.*—At a special meeting of the stockholders of the West Jersey & Seashore Railroad on February 28, the proposed lease of the company's property and franchises to the Pennsylvania was approved. Over 91 per cent of the outstanding stock was represented at the meeting and was voted unanimously in favor of the lease. The terms of the proposed lease would make it effective July 1, 1930, for a period of 999 years, at an annual rental equal to fixed charges, taxes and a 6 per cent dividend yearly upon the stock of the West Jersey & Seashore Railroad Company. The lease must next be voted upon by the stockholders of the Pennsylvania at the annual election in Philadelphia on April 8, and it is also subject to the approval of the Interstate Commerce Commission. Provided the lease becomes effective July 1, 1930, a special cash dividend of 5 per cent is to be paid to the West Jersey & Seashore stockholders. This special dividend is to clear up the situation for the first six months of 1930 before the new lease becomes effective. It will not interfere with the payment of the regular dividend in the month of April, 1930.

PITTSBURGH & WEST VIRGINIA.—*Wabash to Be Party to Acquisition Case.*—The Interstate Commerce Commission has authorized the Wabash to intervene as a party to the proceedings on this company's application for authority to acquire control of the Wheeling & Lake Erie and the Western Maryland. All three lines are assigned to the Wabash system in the commission's consolidation plan.

The commission has also authorized the Wabash to intervene in the proceedings on the application of the P. & W. V. for authority to acquire control of the Western Maryland. The Wabash petitions stated that it is engaged in negotiations with a view to furthering the grouping of roads proposed in the commission's plan.

At the request of the Wabash the commission has also postponed the hearing assigned in the Wheeling & Lake Erie case from March 10 to June 9 and that in the Western Maryland case from April 9 to July 8.

READING.—*Annual Report.*—See summary published as an advertisement on adjacent pages.

ST. LOUIS-SAN FRANCISCO.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $8,085,000 of 4½ per cent equipment trust certificates, which it proposes to sell to The First National Old Colony Corporation and Associates, the highest bidder, at 98.03.

TENNESSEE CENTRAL.—*Securities.*—The Interstate Commerce Commission has issued an order, supplemental to an original order of March 10, 1926, which permitted this company to issue $500,000 of 7 per cent cumulative preferred stock, the proceeds to be used for additions and betterments. In the present application the railroad stated its inability to undertake certain of the improvements contemplated originally and thus sought an amendment to the original order which would permit an application of the funds to other projects.

TOLEDO, PEORIA & WESTERN.—*Operation and Construction.*—The Interstate Commerce Commission has authorized this company to operate under trackage rights over the lines of the Chicago, Burlington & Quincy and the Peoria Terminal Company in Peoria, Ill., and to construct connections with these roads in that city. That section of the application was denied which sought authority to construct an industrial spur in East Peoria, Ill.

Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of the respective valuation dates as follows:

Okmulgee Northern	$321,000	1919
Illinois Northern	972,023	1918
Sandy Valley & Elkhorn	4,750,000	1918

Average Prices of Stocks and of Bonds

	Mar. 4	Last week	Last year
Average price of 20 representative railway stocks.	133.96	133.66	135.74
Average price of 20 representative railway bonds..	92.64	92.44	91.24

Dividends Declared

Alabama & Vicksburg.—Capital Stock, 3 per cent, payable April 1 to holders of record March 10.

Boston & Albany.—$2, quarterly, payable March 31 to holders of record February 28.

Maine Central.—Common, $1.25, quarterly, payable April 1 to holders of record March 15.

Vicksburg, Shreveport & Pacific.—Common, $2.50; Preferred, $2.50, both payable April 1 to holders of record March 10.

Railway Officers

Executive

William J. Hobbs, vice-president of the Boston & Maine, with headquarters at Boston, Mass., relinquished active duties on March 1, but will serve from time to time in an advisory capacity, with the title of vice-president, retired. Mr. Hobbs was born at Wells, York County, Me., on January 16, 1854. He attended the Westbrook Seminary from which he was graduated in 1870; and commenced his railroad career with the Eastern Railroad (now a part of the

William J. Hobbs

B. & M.) as a clerk in 1873. A year later he was advanced to cashier in the treasurer's office and in addition to this position was appointed paymaster in 1874. In 1883, he was promoted to auditor of the Eastern and upon the lease of that road to the Boston & Maine in 1884, he served in this capacity on the combined roads. In August, 1900, he was appointed comptroller and auditor in charge of the financial and accounting departments, and in April, 1904, his title was changed to general auditor and fourth vice-president. Since 1913 he has served as vice-president in charge of finance.

George S. Waid, vice-president and general manager of the Texas lines of the Southern Pacific, with headquarters at Houston, Tex., was granted a leave of absence on March 1, pending his retirement from active service under the pension rules of the company. Mr. Waid has spent 49 years in railway service, 44 of which have been with the Southern Pacific. He was born in Crawford county, Pa., on May 6, 1863, and entered railway service in 1881 as a telegraph operator on the Erie. Five years later he became a brakeman on the Southern Pacific, then advancing through the positions of conductor and yardmaster. In 1905 he became trainmaster on the Galveston, Harrisburg & San Antonio, now part of the Southern Pacific, at El Paso, Tex., two years later being promoted to division superintendent at the same point. Mr. Waid was promoted to assistant general manager of the G., H. & S. A., the Houston & Texas Central, the Houston, East & West Texas, the Houston & Shreveport and the Texas & New Orleans (all now

George S. Waid

parts of the Texas lines of the Southern Pacific), with headquarters at Houston, in 1912, a position he held until his further advancement to general manager in 1915. He has served as vice-president and general manager of the Texas lines of the Southern Pacific since 1916.

Financial, Legal and Accounting

The office and staff of **F. L. Nellis,** secretary of the Seaboard Air Line, will be moved from New York to Norfolk, Va., on March 15.

James Correy, tax agent of the Denver & Rio Grande Western, with headquarters at Denver, Colo., retired from active duty on March 1, after 42 years of railway service. Mr. Correy had been tax agent of the Rio Grande Western since 1902.

M. E. Keehan, assistant comptroller of the Chicago Great Western, has been appointed freight claim agent with headquarters as before at Chicago, succeeding **C. F. Carlson,** deceased, and the position previously held by Mr. Keehan has been abolished. **W. H. Sievers,** auditor of disbursements, has been promoted to general auditor, with headquarters as before at Chicago.

George F. Glacy, deputy comptroller of the Boston & Maine, has been appointed comptroller, succeeding W. S. Trowbridge, with headquarters as before at Boston, Mass. Mr. Glacy was born on February 21, 1893, in Brooklyn, N. Y., and after an education in the public schools there, entered the employ of the New York Central, in 1908, as an office boy. Later he advanced to junior clerk and in August, 1911, he was transferred to the Boston & Albany, serving as senior clerk and general bookkeeper while with that company. From

George F. Glacy

1918 until 1920 he served as chief clerk to the comptroller of the Boston & Maine and in the latter year he was promoted to assistant auditor. In 1924, he was advanced to auditor of disbursements and in 1926, deputy comptroller, the position he held at the time of his recent promotion.

Operating

A. E. Lloyd, superintendent of the Western division of the New York Central, has been promoted to assistant to the vice-president in charge of operation, with headquarters as before at Chicago.

W. A. Smith has been appointed assistant trainmaster of the North Carolina division of the Seaboard Air Line, with headquarters at Hamlet, N. C., replacing **J. W. Sexton,** who has resigned to enter the service of another company.

Thomas Scott, assistant superintendend on the Southern Pacific at Ennis, Tex., has been promoted to superintendent of the Victoria division, with headquarters at Victoria, Tex., succeeding **G. B. Goodloe,** who has been transferred to the Houston division, with headquarters at San Antonio, Tex.

Fred Grundler, superintendent of the Michigan division of the New York Central, with headquarters at Elkhart, Ind., has been transferred to the Illinois division, with headquarters at Gibson, Ind., succeeding **E. W. Brown,** who has been transferred to the Toledo division, with headquarters at Toledo, Ohio. Mr. Brown succeeds **W. P. Lamb,** who has been transferred to the Western division, with headquarters at Chicago. Effective March 1, the Michigan division was abolished, the Toledo division was extended to include the Old Road, between Toledo and Elkhart, Ind., and the Fayette branch, and the Lansing division was extended to include the Monroe, the Grand Rapids and the Goshen & Michigan branches.

C. A. Fink, trainmaster of the Conway Springs, Roper and Arkansas City districts of the Southern Kansas division of the Missouri Pacific, with headquarters at Arkansas City, Kan., has been promoted to assistant superintendent of the Northern Kansas division and the Atchison district between Kansas City and Atchison, including the Atchison terminal and the St. Joseph district of the Omaha division, with headquarters at Atchison, Kan. Mr. Fink succeeds **E. W. Stanley,** who has been appointed trainmaster of the Little Rock, Norman, Pike City, Nashville and Hot Springs districts of the Arkansas division with headquarters at Little Rock, Ark., replacing **J. J. Watson,** who has been transferred to the Council Grove and Salina districts of the Central Kansas division, with headquarters at Council Grove, Kan. Mr. Watson succeeds **G. R. Mabie,** who has been transferred to the Southern Kansas division at Arkansas City, succeeding Mr. Fink.

E. W. Fowler, inspector of transportation of the Chicago Great Western at Chicago, has been promoted to assistant general superintendent of transportation, with headquarters at Oelwein, Iowa, and the position of inspector of transportation has been abolished. The Northern and Western divisions, on March 1, were combined into the Minnesota division, the Western division with headquarters at Clarion Iowa, being abolished and **C. J. Kavanagh,** formerly superintendent of the Northern division, being appointed superintendent of the Minnesota division, with headquarters as before at St. Paul, Minn. The name of the Southern division has been changed to the Iowa division and **C. J. Foster** remains as superintendent, with headquarters as before at Des Moines, Iowa. The Eastern division and the Oelwein terminal have been combined into the Illinois division. The position of terminal superintendent at Oelwein has been abolished and **S. V. Rowland,** formerly superintendent of the Eastern division at Chicago, has been appointed superintendent of the Illinois division, with headquarters at Oelwein.

J. T. Stanford, trainmaster of the Chicago, Bloomington, Pontiac and Tracy districts of the Illinois division of the Illinois Central, with headquarters at Champaign, Ill., has been promoted to superintendent of the Iowa division, with headquarters at Fort Dodge, Iowa, succeeding **T. H. Sullivan,** who retired from active service on February 1. **C. W. Lentz,** formerly trainmaster of the East St. Louis Terminal division, has been transferred to the Indianapolis, Effingham and Bloomington Southern districts of the Indiana division, with headquarters at Palestine, Ill., succeeding **H. S. Taylor,** who has been transferred to Champaign to replace Mr. Stanford. Mr. Sullivan had been connected with the Illinois Central for 55 years. He was born at Laclede, Mo., on January 28, 1860, and after spending his early life at St. Louis, Mo., and Cherokee, Iowa, he entered railway service at the age of 15 years as a water boy on a construction train on the Illinois Central. Mr. Sullivan then served successively as section laborer, station clerk, brakeman, freight conductor, yardmaster and passenger conductor. In 1903, he was promoted to trainmaster at Cherokee, then being transferred to Dubuque, Iowa in 1905. He was further promoted to superintendent of the Dubuque division in 1909, where he remained until his transfer to the Springfield division in 1912. Mr. Sullivan had served as superintendent of the Iowa division since 1913.

Leslie B. McDonald, assistant general manager of the Texas lines of the Southern Pacific, has been promoted to general manager of those lines, with headquarters as before at Houston, Tex. Mr. McDonald has been connected with the Texas lines of the Southern Pacific for nearly 28 years, beginning on May 5, 1902, in the accounting department at Victoria, Tex. He was born on August 26, 1883, at Wylie, Tex., and

L. B. McDonald

completed a college education. He also served in the Southern Pacific accounting department at Houston, then becoming chief clerk to the division engineer and later to the division superintendent. In 1909, Mr. McDonald was advanced to assistant superintendent at Victoria, where he remained until 1912, when he was promoted to superintendent of terminals at Houston. He was transferred to the El Paso division at El Paso, Tex., in 1917 and to the Houston division of the Galveston, Harrisburg & San Antonio (now part of the Southern Pacific) at San Antonio, Tex., in 1918. In 1925 he was promoted to assistant general manager of the Texas lines, his further promotion to general manager becoming effective on March 1.

Pomeroy Nichols, general agent of the Atlantic Coast Line at Port Tampa, Fla., has been appointed superintendent, with the same headquarters. Mr. Nichols was born on December 5, 1891, at Petersburg, Va. After a high school education he began his railway career with the Atlantic Coast Line, on October 2, 1910, and has been in its service continuously until the present time. Until July, 1912, he served as receiving clerk, car service clerk, rate clerk, and chief bill clerk at Petersburg, Va., when he was transferred to Fayetteville, N.

Pomeroy Nichols

C., to serve as despatch bill clerk. In August, 1912, he was appointed cotton agent at Thomasville, Ga., and a year later chief clerk. In October, 1914, he became freight agent at Live Oak, Fla., and in March, 1918, was transferred to Charleston, S. C., to serve as chief clerk to freight agent, and later freight agent. From August 1, 1923, to the present time, Mr. Nichols has been located at Port Tampa, Fla., and while at these headquarters has served successively, until his recent appointment, as assistant general agent, port agent and general agent.

Andrew D. Mims, superintendent of the Houston division of the Southern Pacific, with headquarters at San Antonio, Tex., has been promoted to assistant general manager of the lines in Texas, with headquarters at Houston, Tex. He was born at Houston on July 8, 1881, and attended the public schools in that city and the Houston Business College. In 1895 he entered railway service on the Houston & Texas Central

Andrew D. Mims

(now part of the Southern Pacific) as a messenger in the auditor's office at Houston and shortly thereafter he became a clerk in that department, where he remained until 1903 when he was transferred to the office of the superintendent of the Texas & New Orleans. After serving there as a clerk and timekeeper Mr. Mims was advanced to chief clerk in the office of the engineer maintenance of way in February, 1907, then becoming transportation clerk in the office of the general manager in February, 1915. He was promoted to superintendent of the Galveston, Harrisburg & San Antonio (now part of the Southern Pacific) at Victoria, Tex., in 1919, later being transferred to the Houston division at San Antonio. His promotion to assistant general manager became effective on March 1.

Ira E. Manion, who has been promoted to superintendent of the Willmar division of the Great Northern, with headquarters at Willmar, Minn., has completed more than 28 years of railway service, 17 of which have been with the Great Northern. He was born at Cuba, Kan., on December 28, 1885, and attended the high schools of Republic county, Kan. At the age of 15 years, Mr. Manion entered railway service on the Chicago, Rock Island & Pacific, where he remained in various telegraphic positions until 1906, when he became a relay telegraph operator on the Northern Pacific at the general office at St. Paul, Minn. From March, 1909, to October, 1912, he served on the Rock Island as an operator and train dis-

Ira E. Manion

patcher, then entering Great Northern service as a train dispatcher. He was advanced successively through the positions of night chief dispatcher and yardmaster, and in September, 1916, he was promoted to trainmaster of the St. Cloud division. Mr. Manion was then transferred to the Willmar division in January, 1917, to the Mesabi division in March, 1917, to the Northern division in November, 1918, to the Butte division in July, 1926, and to the Kalispell division in June, 1929. His promotion to superintendent of the Willmar division became effective on February 1.

R. H. Flinn, general superintendent of motive power of the Central region of the Pennsylvania, with headquarters at Buffalo, N. Y., has been appointed general superintendent of the Western Pennsylvania division, with headquarters at Pittsburgh, Pa., succeeding **J. H. Redding,** deceased. Mr. Flinn was born on March 8, 1887, at Camden, N. J., and entered railway service on July 1, 1902, as assistant draftsman in the Camden, N. J., shops of the Pennsylvania. He became locomotive fireman on the West Jersey & Seashore, operated by the Pennsylvania, in June, 1906, and

R. H. Flinn

was transferred to the Columbus, Ohio, shops as special apprentice on June 28, 1909. From February, 1911, until June, 1912, he was engaged in special work for the general superintendent of motive power at Pittsburgh, and from the latter date until May, 1913, was motive power inspector in the office of the superintendent of motive power at Columbus. He was general foreman at Louisville, Ky., from May, 1913, to January, 1915, and was then transferred in the same capacity to Bradford, Ohio, where he remained until June, 1916, Mr. Flinn then served as assistant master mechanic at Allegheny, Pa., from June, 1916, until November, 1917, and then became assistant engineer of motive power at Toledo, Ohio, which position he held until July, 1918, when he became master mechanic at Terre Haute, Ind. He served in this capacity successively at Indianapolis, Ind., and at Columbus, Ohio. In June, 1928 he was appointed superintendent of motive power, western Pennsylvania division, and a year later general superintendent of motive power of the Central region, the position he held until his recent appointment.

Traffic

M. B. Moore, general agent for the Missouri Pacific at Atlanta, Ga., has been transferred to Philadelphia, Pa. **R. W. Moss,** general agent at Tampa, Fla., has been transferred to Atlanta, succeeding Mr. Moore.

J. D. Beeler, general agent of the freight department of the Chicago & Eastern Illinois, has been promoted to assistant general freight agent, with headquarters as before at Evansville, Ind.

P. B. McAtee, assistant general freight and passenger agent of the Denver & Rio Grande Western, at Durango, Colo., retired from active duty on March 1, after 43 years of railway service.

H. E. Carson, assistant general passenger agent of the Michigan Central at Chicago, has been appointed general passenger agent of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at St. Louis, Mo. **J. W. Gardner,** assistant general passenger agent of the Big Four at St. Louis, has been transferred to Cincinnati, Ohio.

J. H. Wilson, general live stock agent of the Missouri-Kansas-Texas, with headquarters at Parsons, Kan., has been appointed general live stock agent of the Missouri-Kansas-Texas lines, with headquarters removed to Fort Worth, Tex., and the position formerly held by Mr. Wilson has been abolished. On the lines in Texas, Mr. Wilson succeeds **W. V. Galbreath,** who retired from active duty on March 1, after 29 years of service as general live stock agent.

A. C. McIntyre, general freight agent, of the Lehigh Valley, and **M. J. Ormond,** general eastern freight agent, have been appointed assistant freight traffic managers. **E. F. Neagle,** assistant general freight agent, industrial development, has been appointed general development agent, in charge of industrial and traffic development, and **F. H. Moser,** has been appointed coal traffic manager and will be succeeded as coal freight agent by **T. A. Harahan.** All will have headquarters at New York.

Bayard R. Brenan, who has been promoted to general freight agent of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati,

Bayard R. Brenan

Ohio, has been connected with that road for more than 28 years. He was born at Marietta, Ohio, on January 5, 1881, and entered railway service in October, 1899, in the local freight office

of the Norfolk & Western at Columbus, Ohio. Mr. Brenan entered Big Four service in December, 1901, as clerk in the freight office at Columbus. From 1902 to 1910 he served successively as assistant cashier, cashier and chief clerk in the freight office at Columbus, agent at Middletown, Ohio, and chief clerk to the superintendent at Springfield, Ohio. He was then advanced to general agent at Springfield, being appointed agent at Cleveland, Ohio, in 1918. In June, 1928, Mr. Brenan was promoted to assistant general freight agent at Cleveland, his further promotion to general freight agent at Cincinnati becoming effective on February 1.

Engineering, Maintenance of Way and Signaling

A. Lee Atwell, assistant engineer on the Chicago & Western Indiana, has been promoted to valuation engineer, with headquarters as before at Chicago.

D. B. Packard has been appointed chief engineer of the Winston-Salem Southbound Railway, with headquarters at Wilmington, N. C., replacing **D. W. Gross,** deceased.

T. W. Fatherson, superintendent of the Western division of the Chicago Great Western, with headquarters at Clarion, Iowa, has been appointed engineer maintenance of way, with headquarters at Oelwein, Iowa.

W. H. Stedje, division engineer on the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Superior, Wis., has been promoted to resident engineer, with headquarters at Minneapolis, Minn. **S. P. Berg,** assistant engineer at Minneapolis, has been promoted to division engineer at that point, succeeding **A. Birdsell,** who has been transferred to Superior to replace Mr. Stedje. **E. M. Northenscold,** assistant engineer at Fond du Lac, Wis., has been promoted to division engineer, with headquarters at Gladstone, Mich., a newly created position.

P. D. Fitzpatrick, chief engineer of the Central Vermont, with headquarters at St. Albans, Vt., has been appointed assistant engineer of the Canadian National in charge of the construction of its new Montreal terminal. Mr. Fitzpatrick was born in Springfield, Ill., and was educated in the public schools and the Armour Institute in Chicago. He commenced his railway career with the Chicago & North Western in 1901, and served on track elevation work from that time until 1903, when he entered the service of the Illinois Central. While with this road he held the positions of assistant division engineer and division engineer with headquarters at Chicago and Louisville, Ky., respectively. In 1910, he severed his connection with this road to become superintendent and engineer with a general railroad construction concern. In 1912, he accepted the position of assistant engineer in the construction of the Kansas City terminal, and in May, 1913, left this position to join the engineering staff of the Grand Trunk Western in connection with its terminal at Bay City, Mich. In October of that year he was transferred to the Southern New England as division engineer in charge of construction of this Grand Trunk project, and in March, 1915, went to Southbridge, Mass., to continue the construction work on this now-abandoned line. He remained in Southbridge until February, 1916, when he was appointed valuation engineer of the Central Vermont with headquarters at St. Albans.

P. D. Fitzpatrick

In July of that year he was assigned the added duties of general roadmaster. He held these position until 1918, when he was appointed chief engineer, in which capacity he served until his recent appointment to the Canadian National engineering staff. One of Mr. Fitzpatrick's outstanding accomplishments during his service with the Central Vermont was the rehabiliation of the road immediately after the Vermont flood in 1927. Mobilizing a force of 3,000 men, he started the task of rebuilding more than 90 miles of line and replacing 21 bridges that had been destroyed by the flood, completing the project in three months.

Mechanical

Richard Kling has been appointed master mechanic of the Missouri-Illinois, at Boone Terre, Mo.

William T. Westall, who has been promoted to special assistant superintendent of rolling stock of the New York Central lines west of Buffalo, N. Y., with headquarters at Cleveland, Ohio, has been connected with that road for more than 23 years. He was born on July 16, 1878, at Cleveland, Ohio, and entered railway service in September, 1896, as a helper in the Cleveland shops of the Erie. Two years later he was promoted to car foreman at Youngstown, Ohio, where he remained until April, 1900, when he was appointed wreck master at Cleveland. In April, 1902, Mr. Westall became a special shop clerk on the Lake Shore & Michigan Southern (now part of the New York Central) at the Cleveland shops and in January, 1903, he was appointed car foreman on the Lake Erie, Alliance &

William T. Westall

Wheeling (now part of the New York Central) at Alliance, Ohio. From November, 1906, to July, 1925, he served successively as inspector at the Collinwood (Ohio) car shops of the New York Central, piece work inspector, assistant foreman, foreman of the freight car shop, division general foreman of the Third district, supervisor of car repairs for the United States Railroad Administration and special inspector on the staff of the general superintendent of rolling stock of the New York Central. Mr. Westall was then promoted to assistant master car builder, with headquarters at Toledo, Ohio, being further promoted to master car builder of the Third district, with headquarters at Collinwood, on March 1, 1929. His promotion to special assistant superintendent of rolling stock became effective on February 1.

Obituary

V. R. Plank, district storekeeper in charge of stationery on the Southern Pacific at Oakland, Cal., died in that city on February 26 after a short illness.

C. F. Carlson, freight claim agent of the Chicago Great Western, with headquarters at Chicago, died at the American Hospital in that city on February 17, after a short illness.

W. S. Wilson, superintendent of the St. Louis, Alton & Terre Haute from 1886 until its purchase by the Illinois Central in 1896, died at his home at Pinckneyville, Ill., on January 24 at the age of 77 years.

Harry Isaacs, assistant general baggage agent of the Coast lines of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., died at the Santa Fe hospital in that city on February 24, after a one-day illness. Mr. Isaacs had been in the service of the Santa Fe for 48 years and had been assistant general baggage agent at Los Angeles since 1910.